Florida Department of
TRANSPORTATION

Earthwork Records System (ERS) Project Administrator Instructions

May 29, 2025

Contents

Updates

This section summarizes the updates in this document from the last posted version.

Update	Page(s)
Added Introduction Section	4
Added filtering information based on new filtering requirements	6 – 12
Emphasized PA's responsibility for ensuring direct data entry and turnaround time	16
Inserted section for Incomplete packages when the VT sample in one pad verifies QC samples in a different pad	30
Added ERS Reports chapter	41 - 43
Other minor formatting and grammatical updates as needed.	

What is MAC ERS?

MAC ERS is the Electronic Earthwork Records System. It includes logbooks for Embankment, Subgrade and Base (known as ESB logbooks) and Drainage. The logbooks are created by QC data entry personnel from points on the plans which MAC uses to generate plots.

Why is ERS in MAC?

There are many advantages to including the ERS records in MAC.

- Eliminates the need to maintain site source records
- Allows for all project acceptance data to be stored in the enterprise application
    - Automatic identification of Method of Acceptance (MOA) issues
- Allows for better tracking of Active Technicians for the Independent Assurance (IA) Program
- Connects the laboratory soils testing directly to testing the final product in the field
- Eliminates the need for hand recording data that is already included in MAC
    - Summary of Proctor Samples
    - LOT Index
    - Pit Proctor Tracker
    - List of ERS Technicians
- Provides for the raw data to be entered directly into the application reducing
    - The instances of transposition errors
    - The need to calculate final results
    - The number of fields needed to document the test

What if the project has no internet connection?

The Contractor can request the project be designated as a remote contract. The District Materials and Research Engineer (DMRE) will approve or reject the request depending on the availability of the internet at the project site.

What Does the PA need to do before Sampling and Testing can begin?

- Ensure the QC company or companies have created the plots
- Review the plots and designate them as Ready for Sampling
- Ensure the companies have selected the project gauges from each company's gauge list
- Ensure the initial 3-way gauge comparison is be performed and enter it into MAC

What Does the PA need to do during Sampling and Testing?

- Review open samples for timely processing
- Finalize ERS samples using the ERS Field Density Sample Guide List
- Create Comparison Packages for Field Density samples
- Respond to and process ERS related MC Review findings MC Review for the PA

For more questions and responses, see the MAC ERS FAQs.

Chapter 1 – Project Administrator Functions for Review of ERS Plots

A. Navigating to an Existing ERS Project

An ERS Program Maintenance User (PMU) creates the ERS Project in MAC and assigns the companies so a data entry user from one of the Quality Control (QC) companies can create the plots. There may be more than one QC company assigned. The Project Administrator (PA) reviews the ERS Plots before sampling and testing begins to ensure the plan points are recreated accurately in MAC before samples are displayed on the plots.

1. Select the Earthwork Records System menu option.
2. Select the Earthwork Records System submenu option.

The Earthwork Records System screen appears. If you have not worked on an ERS project before, the screen will say *Please select a ERS Project to View*. If you have worked on an ERS project before, MAC will default to the last ERS Project you worked on.

3. Enter the Financial Project Number (FPN) in the Go to field and select the project from the returned list.

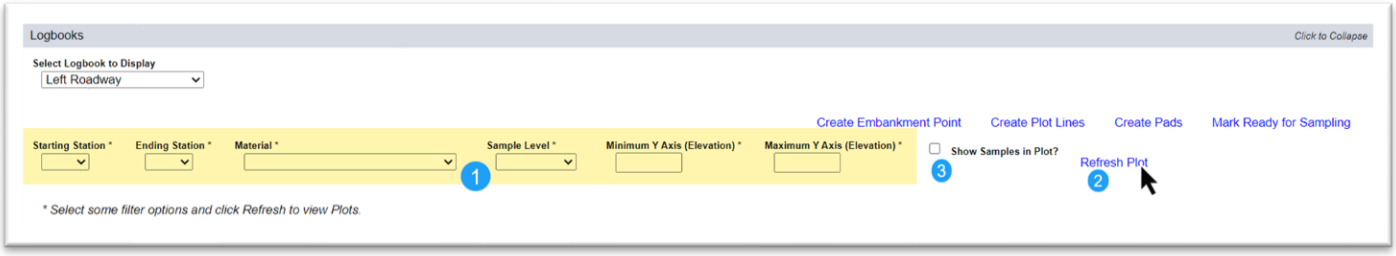
B. Filtering Logbook Plots and Samples

MAC no longer automatically displays plots less than 1000'. This is due mostly to retaining wall plots. Most are less than 1000'. On a deep plot with a lot of samples, rendering the plots along with the samples at the same time exceeds the user's computer available memory in almost every case. The system does not know initially if the plot being selected will cause the available memory overload. To avoid this, you must now apply filters to every plot and then designate when you are ready to plot samples. This gives you a chance to "zoom in" on a realistic, workable area before MAC generates any displays.

NOTE: It is important for ERS users to use best practices when displaying plots:

- Do not click on display options such as Refresh or View Plots multiple times
  - This does not speed up the display process
    - It slows it down because by clicking to “reload” while MAC is still loading the first request causes the system to double the retrieval data in the background which in turns uses even more of the viewer’s CPU and available memory
- Apply realistic filters when displaying plots, especially once samples are taken
  - Many factors will impact the speed of the display including system settings which have nothing to do with the MAC application
  - If the application is slow to respond, try applying filters to display less area; for example, one LOT at a time
  - Also, without filters, it may be difficult to determine where to place the mouse pointer, especially on deep fill areas

1. Filtering ESB Plots



1. Apply filters as desired to the overall logbook. Not all filters have to be supplied every time. Use a combination of filters applicable to the area you wish to see.

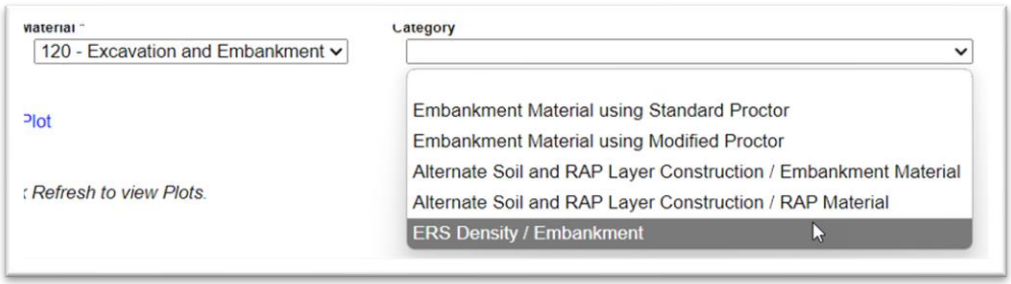
a. **Starting Station** – select the embankment point starting station from the dropdown.

b. **Ending Station** – select the embankment point ending station from the dropdown.

NOTE: For ESB plots with pads, the station range includes both the stationing for the pad and the ESB plots. If they have different station ranges, for example, the pads beginning station is before the ESB beginning station, MAC filters now account for this difference.

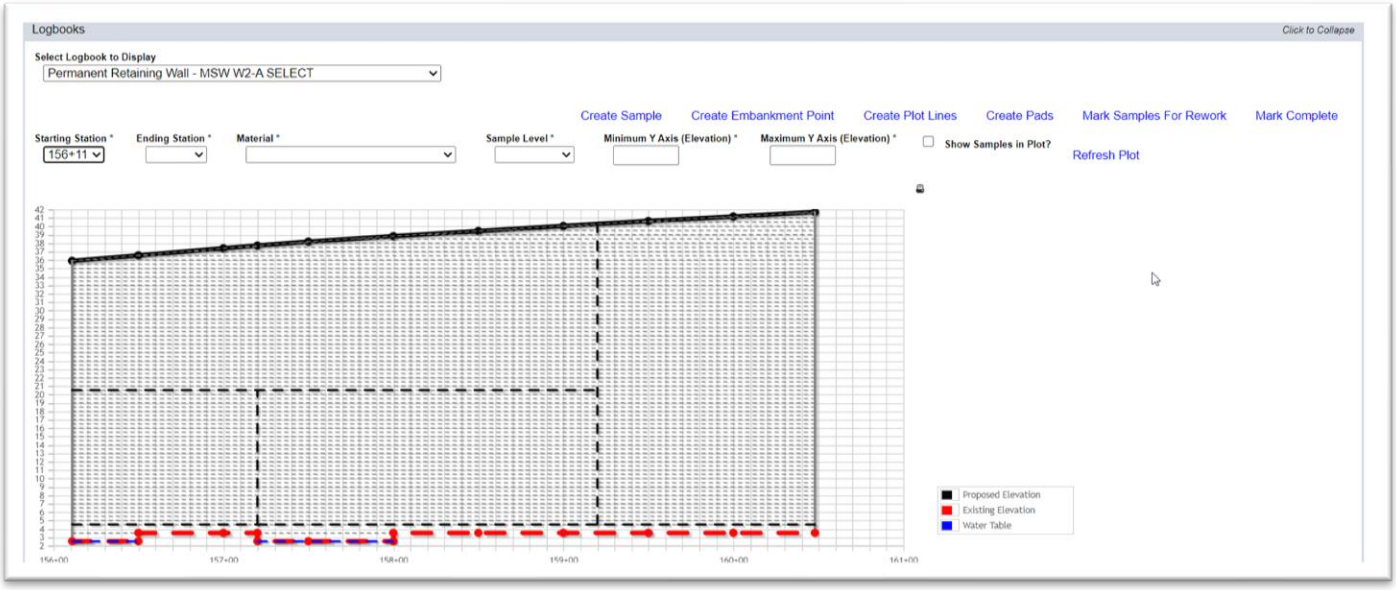
c. **Material** – If the ESB plots contain samples for more than one material and you only wish to see a certain material, select it from the dropdown; for example if you want to see subgrade samples, select 160 – Stabilizing.

d. **Category** – this field appears if a material is selected and displays ALL the category / types for the MAC Spec of that Material that is on your Job Guide Schedule (JGS). Not all are applicable to ERS samples, select the category with ERS samples.



e. **Sample Level** – select the sample level(s) you wish to display. These will not display until you have selected the Refresh Plot option in conjunction with the Show Samples on Plot? option.
f. **Minimum Y Axis (Elevation)** – select an elevation you wish to use as your bottom elevation of the plot,
g. **Maximum Y Axis (Elevation)** – for deep plots, it is helpful to plot the full depth in slices. Select an elevation you wish to use as your top elevation of the plot.

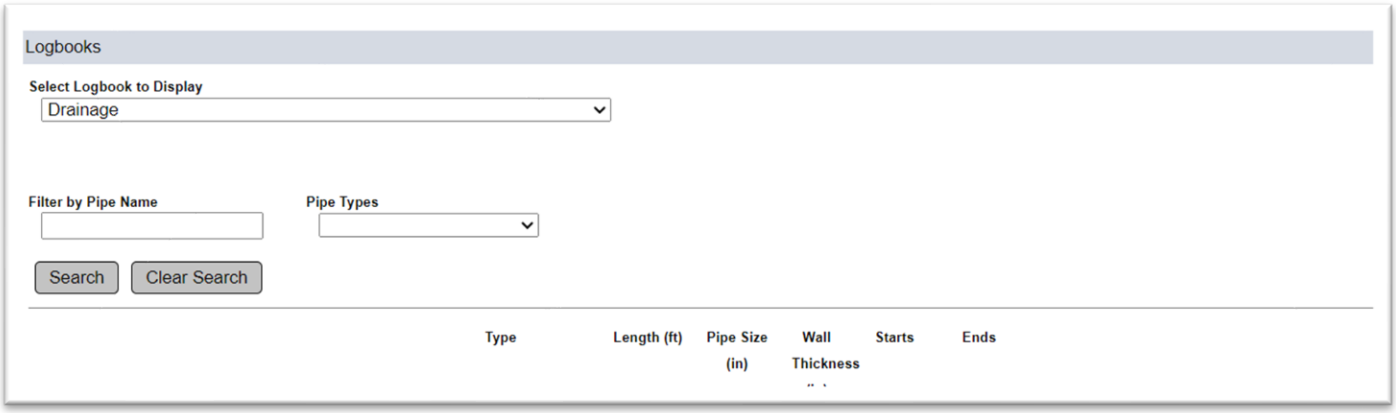
Here is an example of a retaining wall plot that is about 40’ deep with no filters.



Here is the same example with filters to display a more manageable, viewable plot. It might even be necessary to tighten in some more for sample display or location for the next sample purposes.

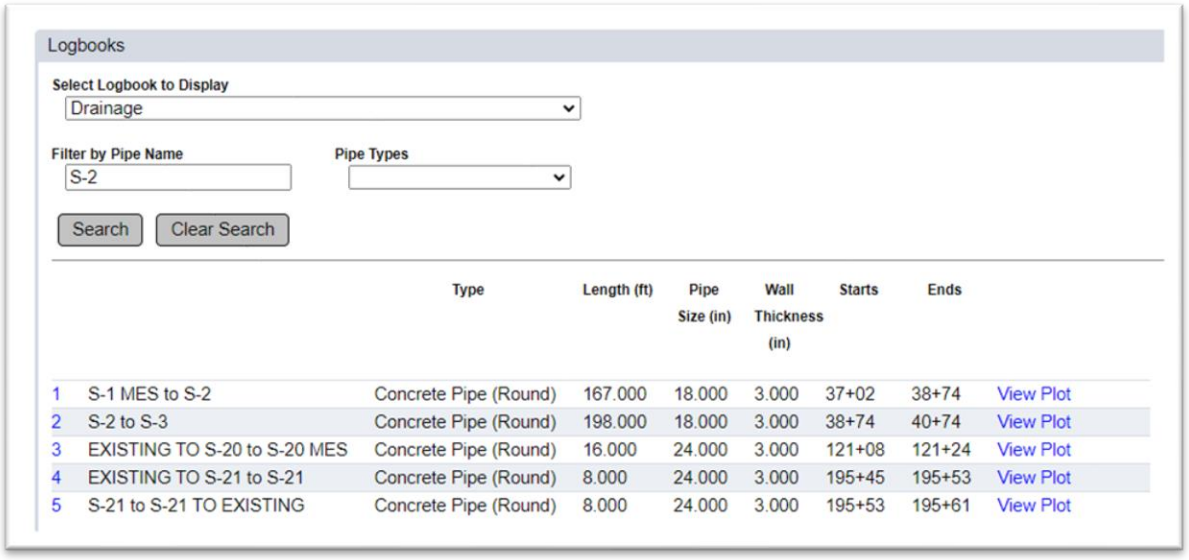
2. Filtering Drainage Plots

Two new filters have been added for Drainage logbooks. The first is for filtering the list of pipe runs which can be helpful in logbooks with more than 50 pipe runs.



1. **Filter by Pipe Name** – if you know the structure name, you can use this field to narrow down the pipe run list to those with that structure in it. Enter all or part of the structure name.
2. Select the Search option.

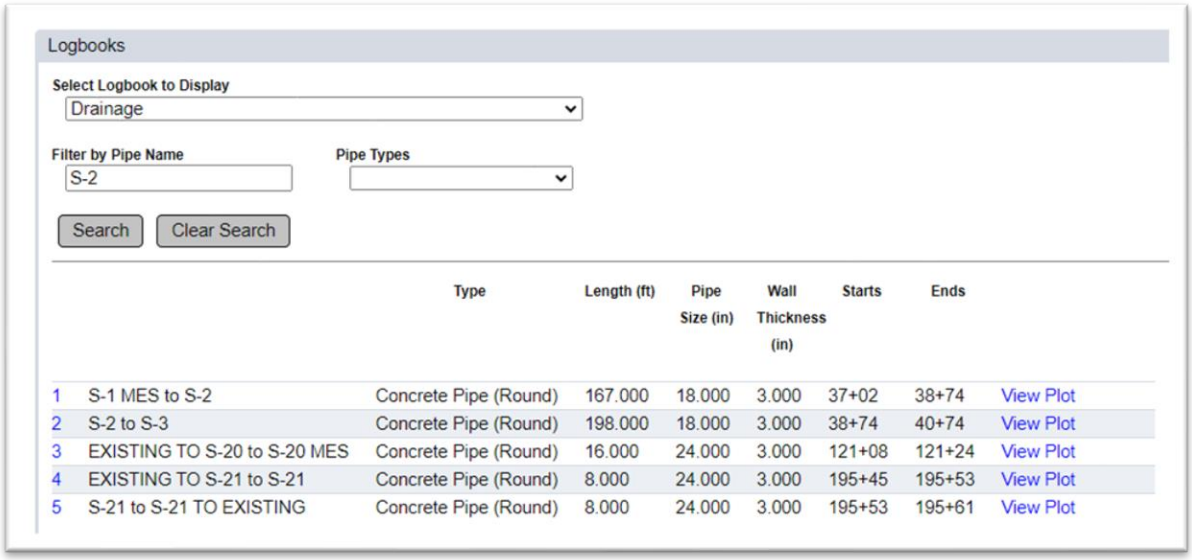
MAC will narrow down the pipe run list to the pip runs with that structure name or similar.



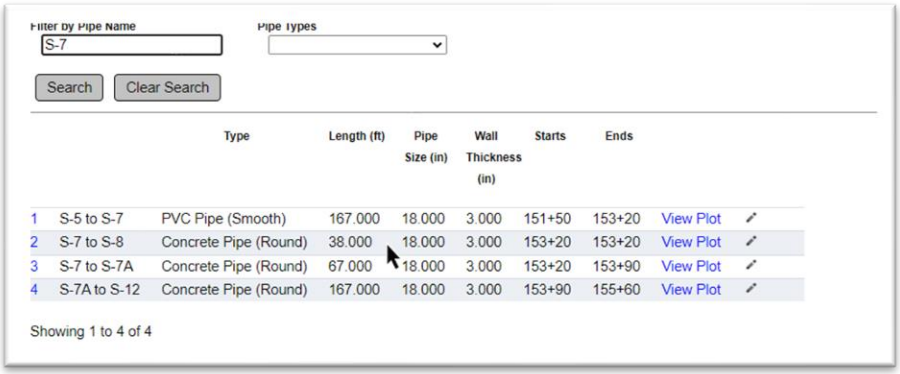
		Type	Length (ft)	Pipe Size (in)	Wall Thickness (in)	Starts	Ends	
1	S-1 MES to S-2	Concrete Pipe (Round)	167.000	18.000	3.000	37+02	38+74	View Plot
2	S-2 to S-3	Concrete Pipe (Round)	198.000	18.000	3.000	38+74	40+74	View Plot
3	EXISTING TO S-20 to S-20 MES	Concrete Pipe (Round)	16.000	24.000	3.000	121+08	121+24	View Plot
4	EXISTING TO S-21 to S-21	Concrete Pipe (Round)	8.000	24.000	3.000	195+45	195+53	View Plot
5	S-21 to S-21 TO EXISTING	Concrete Pipe (Round)	8.000	24.000	3.000	195+53	195+61	View Plot

3. **Pipe Types** – this field can be used to find all the pipe runs of a specific type. Select the pipe type(s) from the dropdown.
4. Select the Search option.

MAC will display the list of pipe runs for that pipe type.

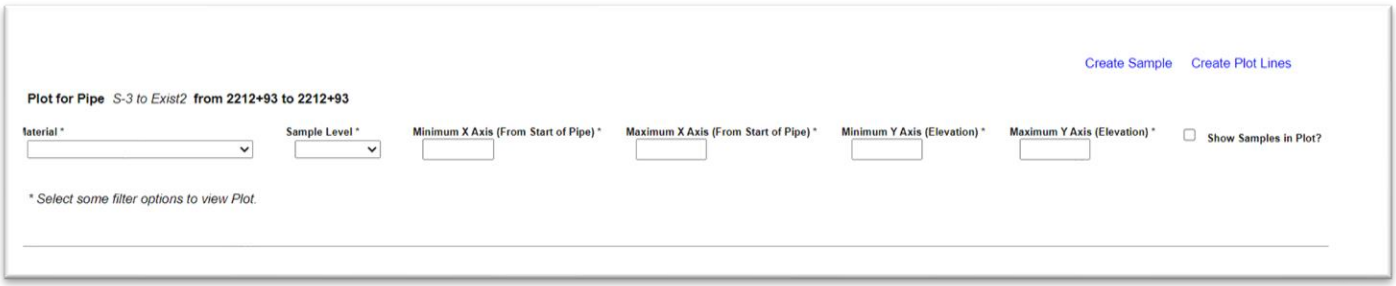


		Type	Length (ft)	Pipe Size (in)	Wall Thickness (in)	Starts	Ends	
1	S-1 MES to S-2	Concrete Pipe (Round)	167.000	18.000	3.000	37+02	38+74	View Plot
2	S-2 to S-3	Concrete Pipe (Round)	198.000	18.000	3.000	38+74	40+74	View Plot
3	EXISTING TO S-20 to S-20 MES	Concrete Pipe (Round)	16.000	24.000	3.000	121+08	121+24	View Plot
4	EXISTING TO S-21 to S-21	Concrete Pipe (Round)	8.000	24.000	3.000	195+45	195+53	View Plot
5	S-21 to S-21 TO EXISTING	Concrete Pipe (Round)	8.000	24.000	3.000	195+53	195+61	View Plot

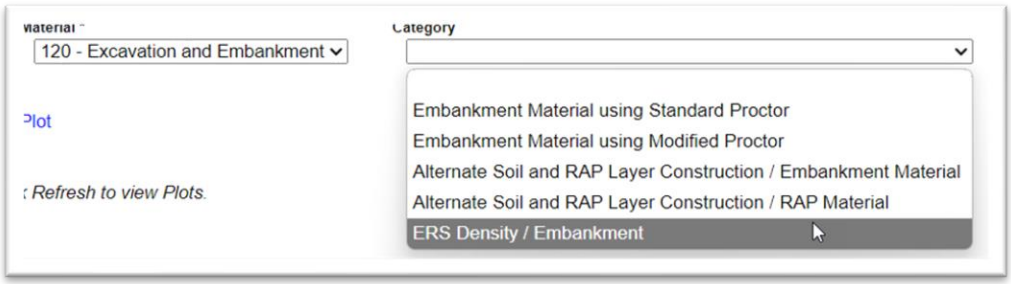


5. From any filtered list, select the row of the pipe run you wish to view.

The second place you must filter is on the pipe run itself. All pipe runs must now have filters in order to display. Although most pipe runes may not need filters, the system will not know which long, deep pipe runs with many samples will need filtering.



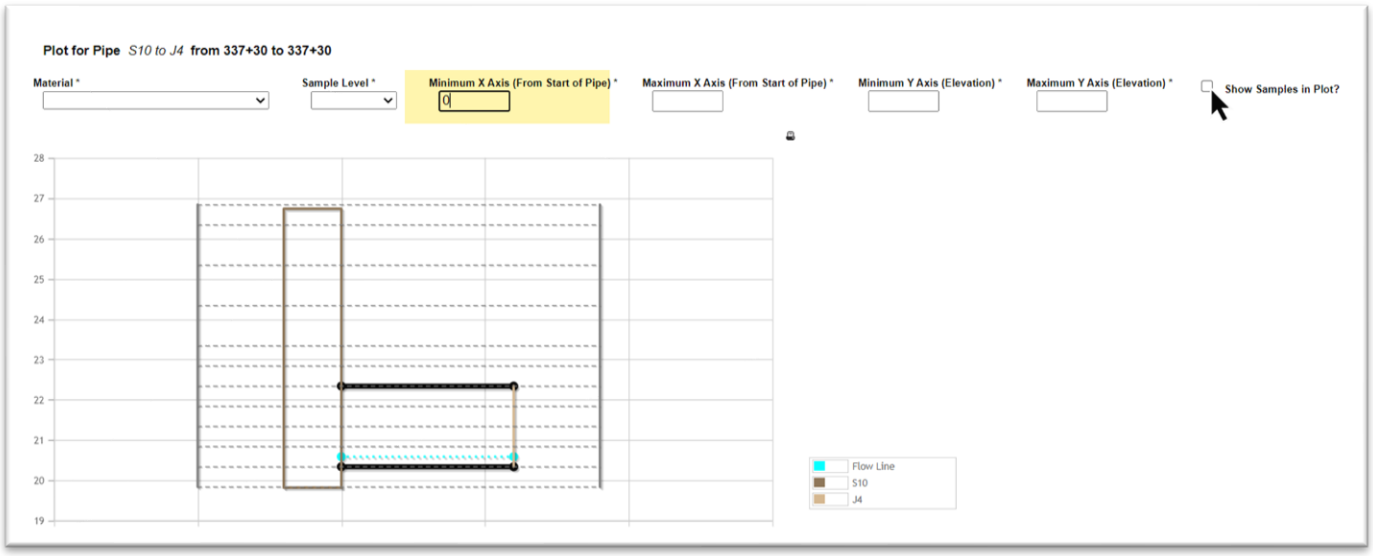
6. Select filters as desired.
a. **Material** – If the drainage plots contain samples for more than one material and you only wish to see a certain material, select it from the dropdown. In most cases, it will be 120 – Embankment and Excavation.
b. **Category** – this field appears if a material is selected and displays ALL the category / types for the MAC Spec of that Material that is on your Job Guide Schedule (JGS). Not all are applicable to ERS samples, select the category with ERS samples.



c. **Sample Level** – select the sample level(s) you wish to display. These will not display until you have selected the Refresh Plot option in conjunction with the Show Samples on Plot? option.
f. **Minimum X Axis (from Start of Pipe)** – for long pipe runs, it is helpful to plot the full length in slices. Select a beginning length you wish to use as your start of the pipe run plot.
g. **Minimum X Axis (from Start of Pipe)** – select an ending length you wish to use as your end of the pipe run plot.

h. **Maximum Y Axis (Elevation)** – for deep pipe runs, it is helpful to plot the full depth in slices. Select an elevation you wish to use as your top elevation of the plot.
i. **Maximum Y Axis (Elevation)** – select an elevation you wish to use as your top elevation of the plot.
7. Unlike the ESB plots, there is no Refresh. Once you have supplied all desired filters, click out of the filter fields (anywhere on the screen) to apply the filters.
8. If you need to refine the plot, update the filters and click out of them again to replot.
9. **Show Samples on Plot?** – once you are satisfied with the plotted area, select this option to plot the samples on the pipe run plot.

NOTE: For most pipe plots, that are not long with phases and many samples, the easiest way to filter so that the pipe run plot will display is by entering a 0 (zero) in the Minimum X Axis field and clicking out of the field.



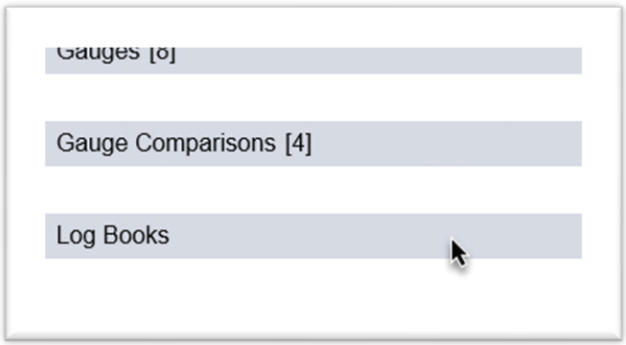
Select the Show Samples on Plot? option to display the samples.

C. Reviewing ERS Plots Before Sampling Begins

When multiple QC companies are assigned, the companies should designate who will be responsible for creating and updating the plots once they have been created by the PMU and report to the PA.

The PA is responsible for reviewing the plots when QC data entry marks the logbook Ready for Sampling as part of the Department's verification of the data entries. If the data appears to be correct and complete, no action needs to be taken. If the PA review indicates that the data is incorrect and incomplete, they will select Mark Not Ready for Sampling to reopen the plot entry for corrections. The PA should review all data points for all ESB and drainage logbook(s) by comparing what is entered into MAC to what is shown in the contract plans.

The PA should set up ERS notifications to know when QC data entry designates a logbook as ready for sampling. The basic notification instructions can be found at Notifications and Dashboard Introduction & Basic Instructions. The list of notifications intended for PAs can be found at Project Administrator Notifications.



1. Click on the Logbook tab to expand it.

2. Select the logbook from the Select Logbook to display dropdown list.
3. Use filters to review the data. The review includes, but is not limited to:
    - Plots
    - Embankment Points
    - LOT data
        - Surface Thickness
        - Base Thickness
        - Subgrade Thickness
            - Project Plan Notes
            - LRI
        - Lift Thickness

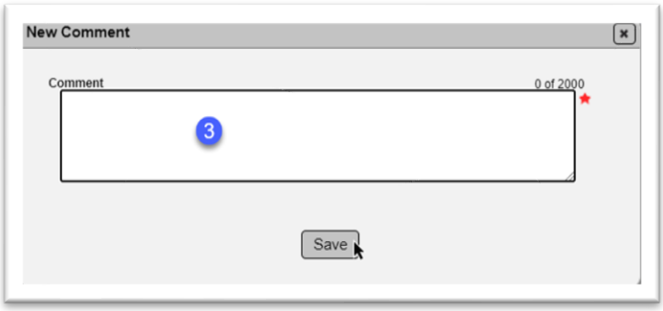
- Pads
  - Labels
  - Thicknesses
- Drainage
  - All Pipe Runs included
  - Structure Names
  - Pipe Types
  - Manual adjustments for pipe lifts

C. Designating a Logbook Not Ready for Sampling

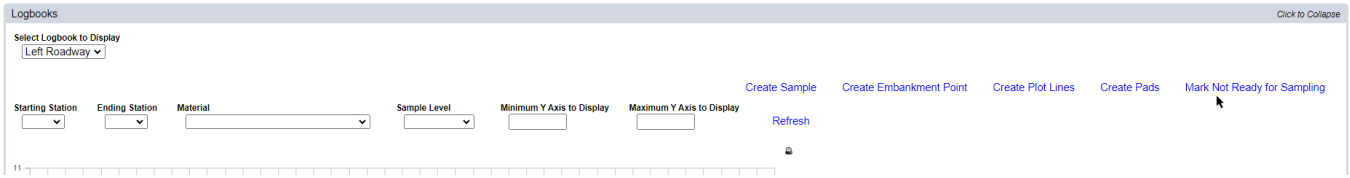
If your review determines the data is incorrect or incomplete, designate the ERS project as Not Ready for Sampling to reopen the logbook and allow QC data entry personnel to make revisions.

1. Click on the ERS Project Comments tab to expand it.
2. Select the New Comment option to create a comment.

A Create Comment dialog box appears



3. **Comment** - include any details for corrections needed.
4. Select the Save option to save the comment.



5. On the logbook, select the Mark Not Ready for Sampling option.

NOTE: This review and designation must be performed before any samples are taken. Since an initial gauge comparison must also be performed before sampling can begin, the PA should perform this review before the initial gauge comparison.

The data entry for the QC company should make changes based on the PA's comments. The data entry person should designate the logbook as Ready for Sampling. Repeat the review until you are satisfied that the plot data is ready for sampling. Indicate to the data entry person who created the plots that you have completed your review.

PAs should subscribe to the ERS notifications that are sent when changes are made after the logbook is Marked Ready for Sampling. If the PA is a recipient of the notifications, they should review the logbook and revised data upon receipt of the notification. They should review the data using the Historical Version option on a weekly basis per ***Materials Manual Section 2.3 Volume I.***

Chapter 2 – Project Administrator Functions for Sample Life Cycle

The role that finalizes ERS samples and create comparison packages is the system role of PA. You must be in your system roles and have the PA role to perform these functions. Field density samples have comparison packages, including resolution, if applicable. Stabilization mixing depth and base thickness samples are auto finalized because they are witnessed by the VT. They do not have comparison packages since there is no VT sample. The roles for updating and resubmitting returned samples is a Data Reviewer for the company of the sample. The instructions for the Data Reviewers can be found in the ERS Sample Manual.

The PA should perform sample review and create comparison packages at a minimum of a weekly basis in accordance with the ***Materials Manual Section 2.3 Volume I*.**

NOTE: ***FDOT Specification Sections 105, 120, 125, 145, 160, 200 and 548*** require direct data entry into MAC for ERS tests. The only exception is a contract deemed a remote contract by the District Materials and Research Engineer and periods where the MAC application is not available, for example, server outages. **It is the PA's responsibility to ensure technicians (both QC and VT) DO NOT write the results on paper and enter into MAC later**. Technicians doing so risk being evaluated under the Independent Assurance Program and receiving a strike for improperly documenting test results and not following ***Specification*** requirements. It is understood that there will be construction operations where the technician will not subject the device being used to record the data to certain risks, such as a trench operation. The nuclear gauge records raw data that can be entered into MAC as soon as the technician is in a safe area.

For remote contracts and periods of MAC outages, it is permitted to document the results on the MAC ERS Density forms contained within the Contractor Quality Control Earthwork Records System *(**Form No. 675-020-27**)* and Verification Earthwork Records System *(**Form No. 675-020-28**).* No other form of documentation should be used as these forms align with MAC sample and test entry fields. The old forms do not. The PA should ensure technicians performing ERS tests on contracts that are not remote keep a supply of the forms on hand in case of an outage.

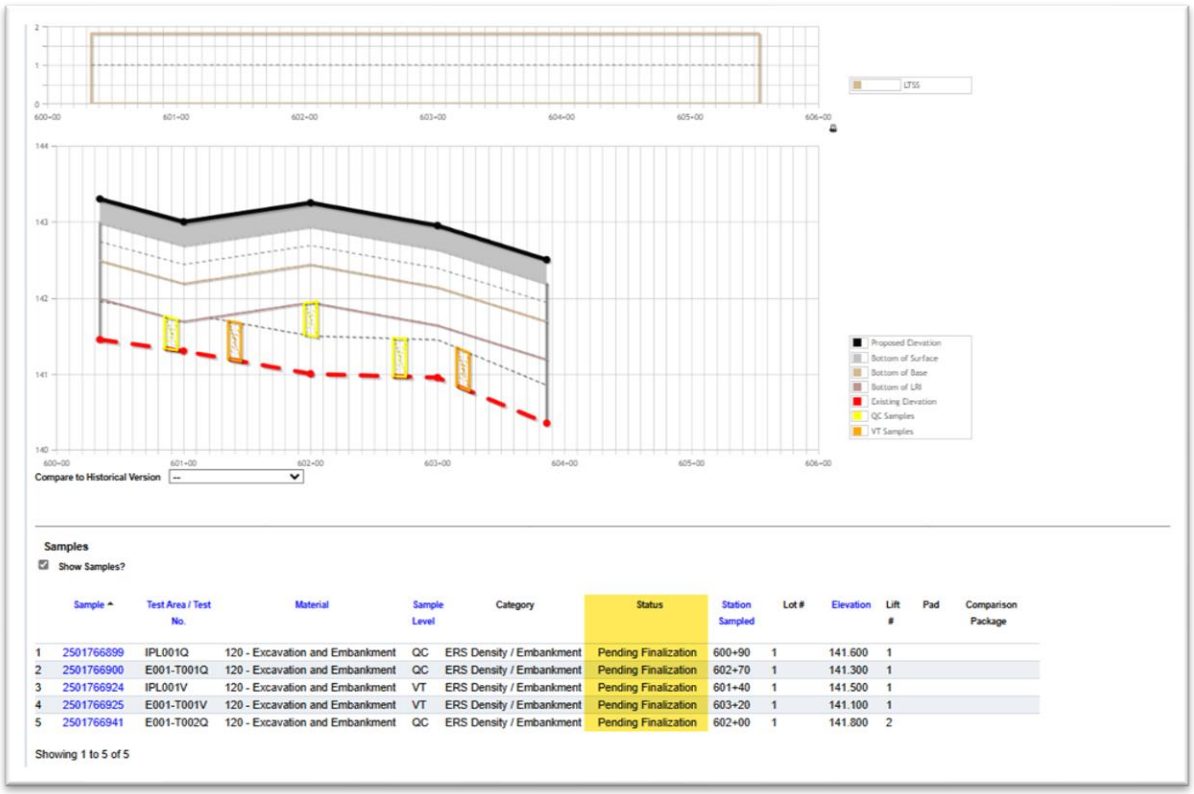
The data recorded on the forms must be entered into MAC within 24 hours of the test being performed per ***Specifications Section 105*** or the application becoming available. **The PA is responsible for ensuring any ERS data is entered in a timely manner as required for all project samples.**

A. Reviewing a Field Density Sample (PA)

ERS samples have sample finalization guide lists. See the ERS Field Density Sample Guide List. The samples are listed on the ERS logbook screen, but the PA must navigate to the sample screen for each sample to review the data before finalizing it and then return to the ERS project screen.

1. In order to display an ERS plot, you must provide display filters on any logbook, regardless of length. See B. Filtering Logbook Plots and Samples.

2. Select the Show Samples option and the Logbook Sample List appears under the plots. The samples with a sample status of pending finalization need to be reviewed and if correct, finalized. If they are not correct or complete, they need to be returned for data corrections.

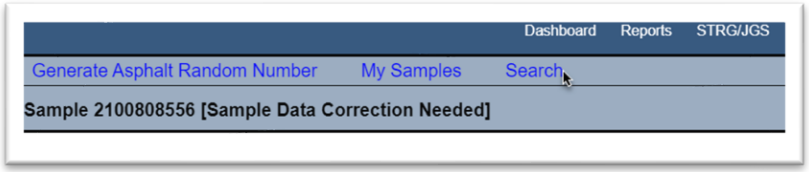


	Sample	Test Area / Test No.	Material	Sample Level	Category	Status	Station Sampled	Lot #	Elevation	Lift #	Pad	Comparison Package
1	2501766899	IPL001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Pending Finalization	600+90	1	141.600	1		
2	2501766900	E001-T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Pending Finalization	602+70	1	141.300	1		
3	2501766924	IPL001V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Pending Finalization	601+40	1	141.500	1		
4	2501766925	E001-T001V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Pending Finalization	603+20	1	141.100	1		
5	2501766941	E001-T002Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Pending Finalization	602+00	1	141.800	2		

There is an easier way to find and review samples for PAs. This is the process used for non-ERS samples and saves the PA from bouncing from the ERS Project to the sample and back.

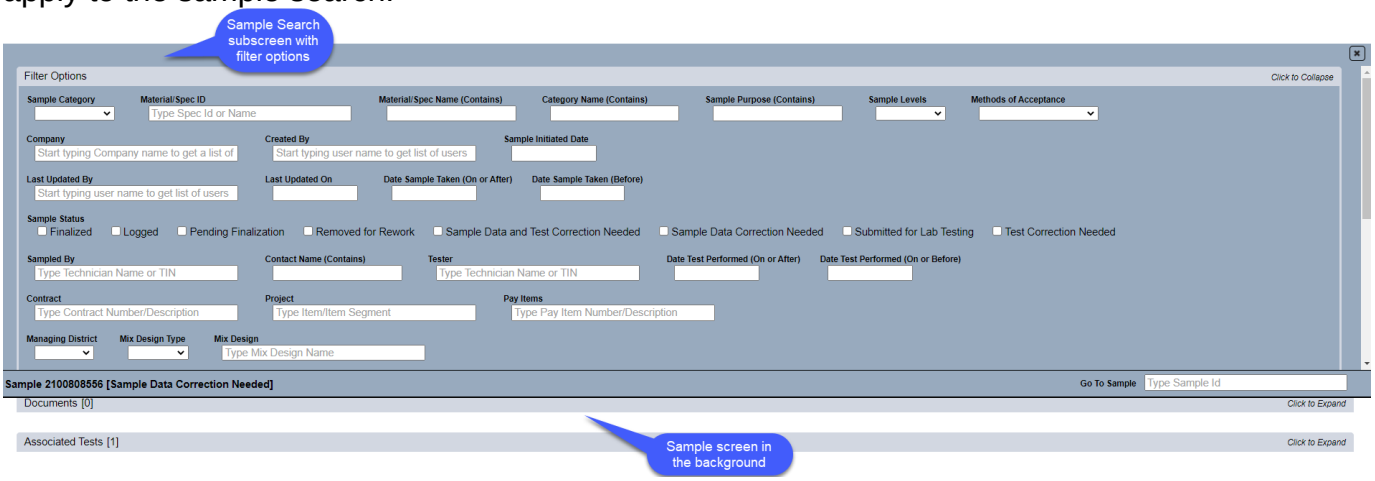
1. Select the Samples menu option.
2. Select the Manage Samples submenu option.

The Sample screen appears.



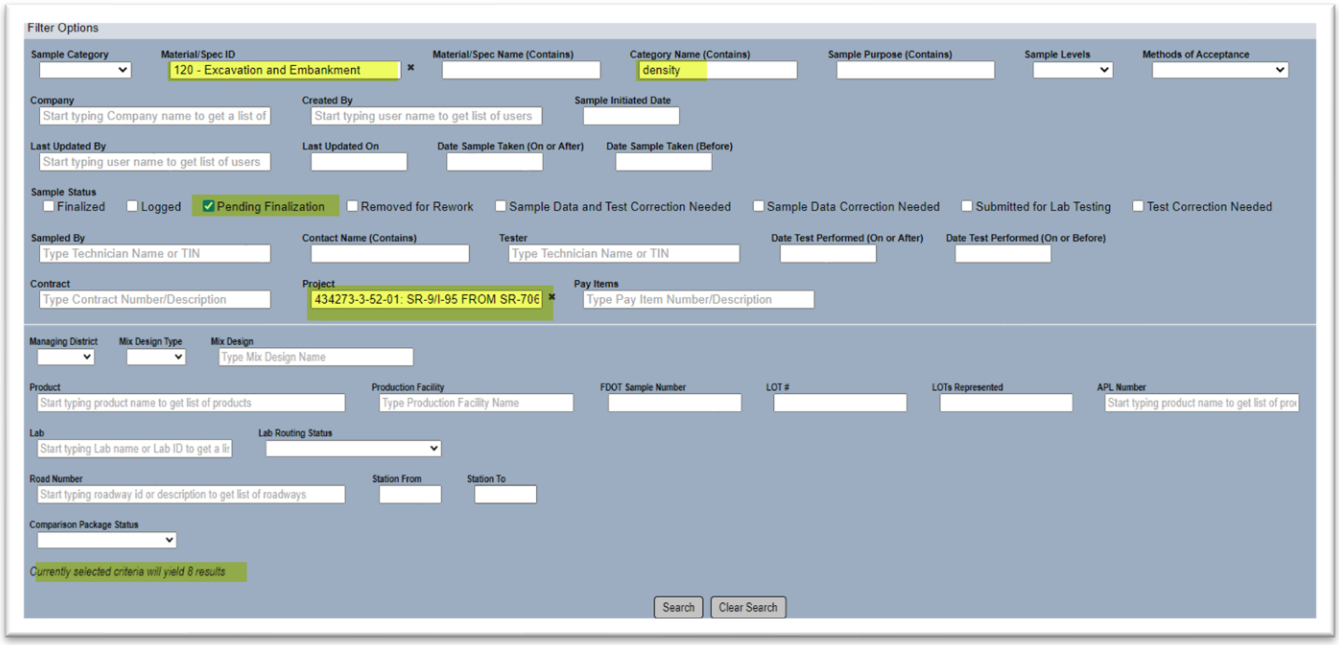
3. Select the Search option.

The Sample Search subscreen appears over the Sample screen in the background with filters to apply to the sample search.



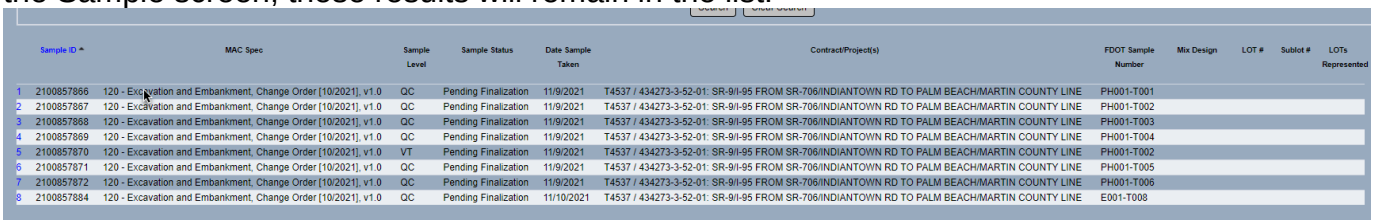
4. Use the following filters:
a. Material/Spec Id – one of the MAC ERS Material Ids
i. 120 – Excavation and Embankment
ii. 145 – Geosynthetic Reinforcement
iii. 160 – Stabilizing
iv. 200 – Rock Base
v. 548 – Retaining Walls
b. Category Name (Contains) – “density” – this will eliminate all lab tests and all other ERS tests besides field densities since stabilizing mixing depth and base thickness samples are auto finalize.
c. Sample Status – check “Pending Finalization”
d. Project – the ERS FPN

Here is an example that returns samples:



5. Select the Search option to retrieve the samples.

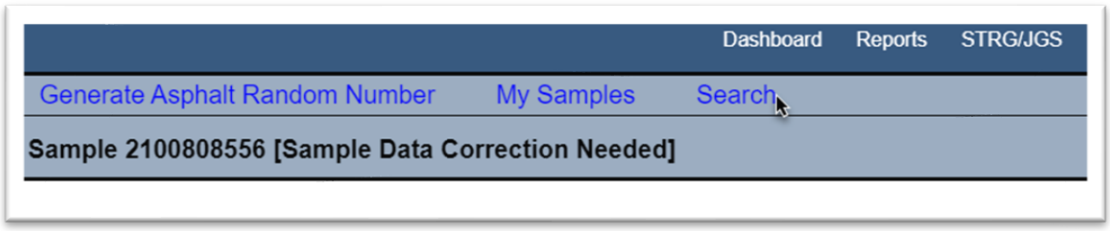
MAC will populate the bottom of the Search subscreen with the results. As long as you remain on the Sample screen, these results will remain in the list.



	Sample ID	MAC Spec	Sample Level	Sample Status	Date Sample Taken	Contract/Project(s)	FDOT Sample Number	Mix Design	LOT #	Sublot #	LOTs Represented
1	2100857866	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T001				
2	2100857867	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T002				
3	2100857868	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T003				
4	2100857869	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T004				
5	2100857870	120 - Excavation and Embankment, Change Order [10/2021], v1.0	VT	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T002				
6	2100857871	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T005				
7	2100857872	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/9/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	PH001-T006				
8	2100857884	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	11/10/2021	T4537 / 434273-3-52-01: SR-9/I-95 FROM SR-706/INDIANTOWN RD TO PALM BEACH/MARTIN COUNTY LINE	E001-T008				

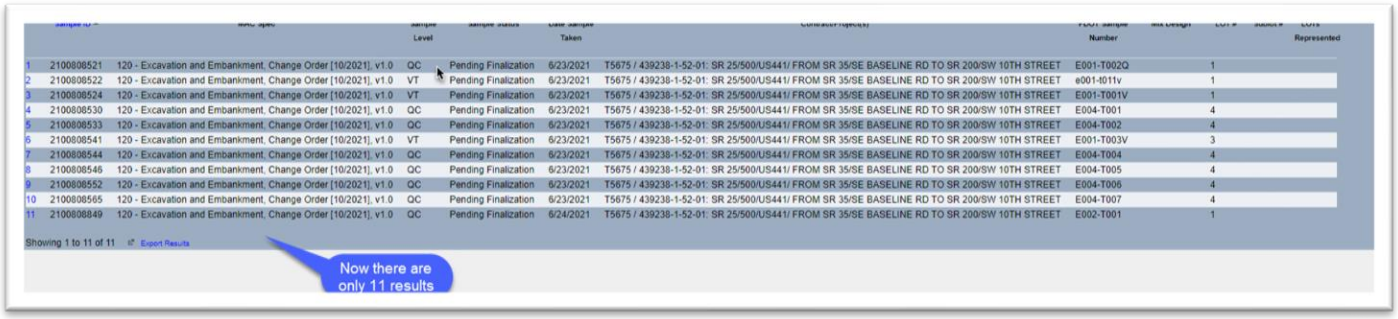
6. Navigate to the first sample by clicking on the first row.

That sample will appear on the sample screen. The Sample Search subscreen will be minimized but is still there. If the sample review shows the data is correct and complete, finalize the sample according to B. Finalizing the Sample. If the sample review is unsuccessful, return the sample for correction as described in the sections below.



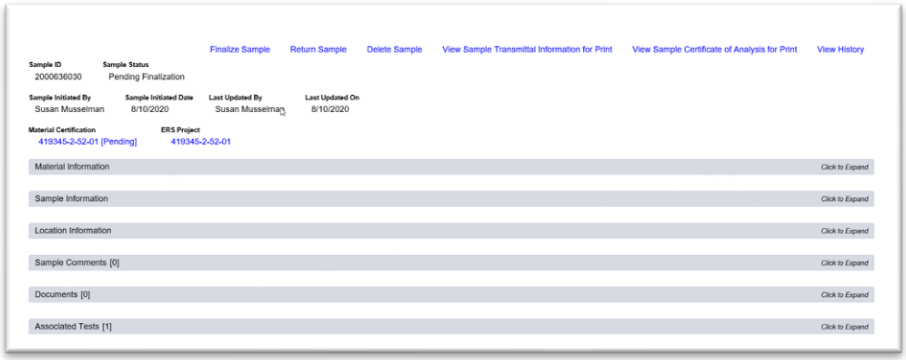
7. Select the Search option again.

The Search subscreen will advance to the front of the screen above the Sample screen. The same results will be on the list generated in step 5, except this first sample will no longer be listed because it should no longer be pending finalization.



8. Click on the top row again to navigate to the next sample.
9. Review the sample and finalize or return it for corrections.
10. Repeat until all samples are finalized or returned for corrections.

1. Reviewing the Sample



1. Review the data using the sample checklist (ERS Field Density Sample Guide List).
a. Materials Tab
b. Sample Information Tab
c. Location Tab
d. Associated Tests Tab – View Test to review results

NOTE: If key fields are incorrect, the sample cannot be returned for data corrections. MAC will allow the PA to return it and allow Data Reviewers to update some (but not all) key fields. Even in cases where key fields can be updated, it does not work. The only way to ensure everything is revised is by creating a new sample with the correct key fields and the incorrect sample deleted. **DO NOT** return a sample for corrections if the incorrect data is a key field.

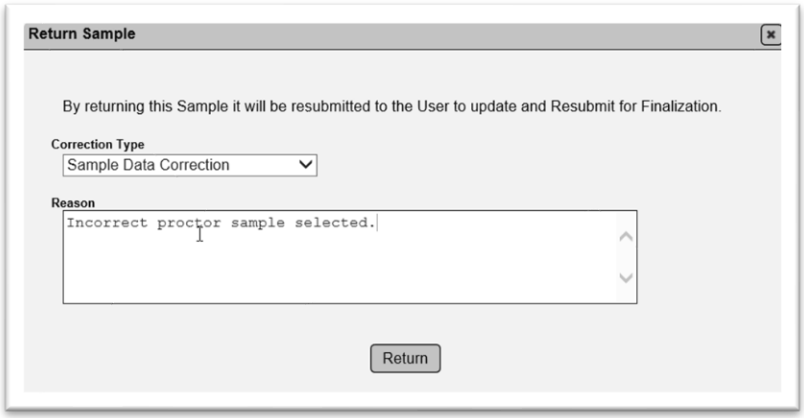
NOTE: The following instructions describe how to return a sample for sample corrections, test corrections or both for instructional purposes. On ERS Field Density samples, it is a good practice to **always return** the sample for Sample Data and Test Corrections (4. Returning a Sample for both Sample and Test Corrections). This avoids errors in the sample status that cannot be corrected and the sample having to be deleted and reentered.

2. Returning the Sample for Sample Data Corrections

If the sample data is incorrect, but the tests results seem appropriate, the PA should return the sample by selecting the Sample Data Correction option. This opens the sample information portion of the sample, but not the test results.

1. On the sample screen, select the Return Sample option.

A Return Sample dialog box will appear.



2. **Correction Type** – select Sample Data Correction from the dropdown list.
3. **Reason** – enter the information that needs to be revised. Include all sample corrections that need to be made.
4. Select the Return option to return the sample to the company that created the sample.

The sample status will be revised to Sample Data Correction Needed. The sample header ONLY will be opened for data corrections.

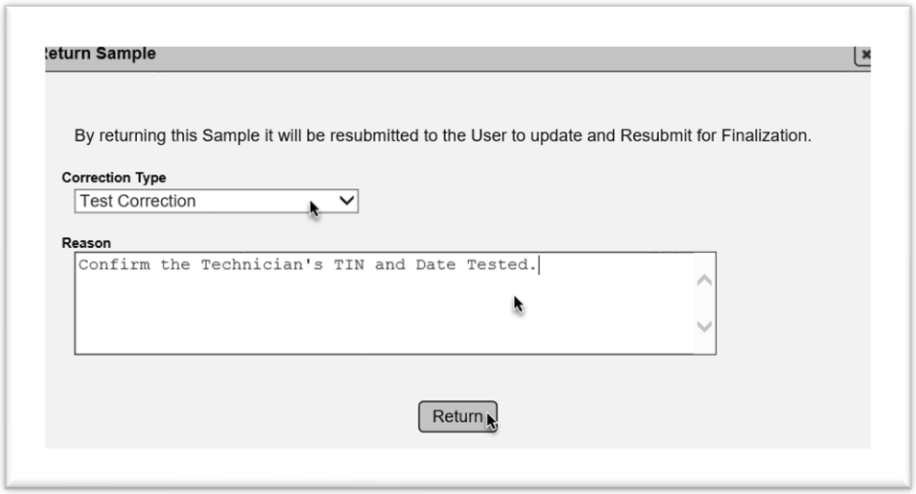
NOTE: If the proctor sample selected on a field density test is incorrect, select Sample Data and Test Correction from the Correction Type dropdown list. Because this field is under the Sample Information tab, it would appear that the Sample Data Correction Needed option is the right one for changing the proctor sample; however, MAC needs to be able to recalculate the test and cannot do so with this option selected. If you select Sample Data Correction, the test status will be locked in Testing In Progress status. The user will not be able to update the test or resubmit the sample to FDOT.

3. Returning a Sample for Test Result Entry Correction

If the test data is incorrect, but the sample information seem appropriate, the PA should return the sample by selecting the Test Correction option. This opens the test portion of the sample, but not the sample information.

1. Select the Return Sample option.

A Return Sample dialog box will appear.



2. **Correction Type** – select Test Correction from the dropdown list.
3. **Reason** – enter the information that needs to be revised.
4. Select the Return option to return the sample to the company that created the sample.

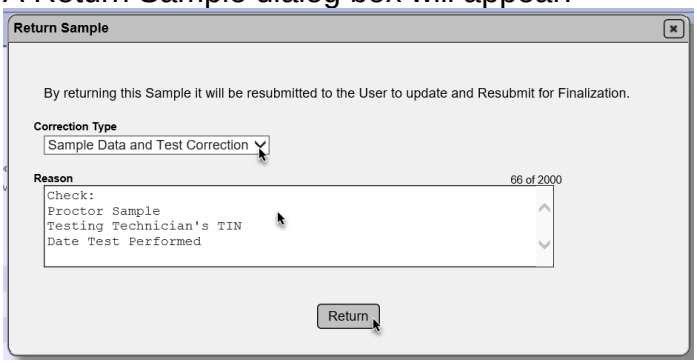
The sample status will be revised to Test Correction Needed. The associated tests will be opened for data corrections.

4. Returning a Sample for both Sample and Test Corrections

If both the sample header and test data have incorrect entries, the PA should return the sample so that both the sample information and the test information are open for corrections. This option should be selected when returning a field density sample for a correction to the proctor sample so that MAC can update the field density test results based on the new values for the updated proctor sample. This is a best practice on ERS samples for all samples that need to be returned.

1. Select the Return Sample option.

A Return Sample dialog box will appear.



2. **Correction Type** – select Sample Data and Test Correction from the dropdown list.
3. **Reason** – enter the information that needs to be revised.

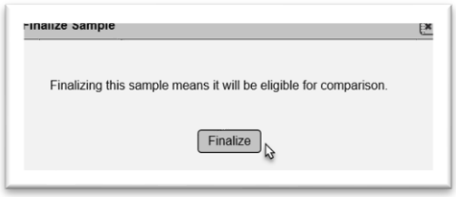
4. Select the Return option to return the sample to the company that created the sample. The sample header AND associated tests will be opened for data corrections.

B. Finalizing the Sample

Once the sample and test data are correct, or if the initial review shows no sample or test data issues, you are ready to finalize the sample.

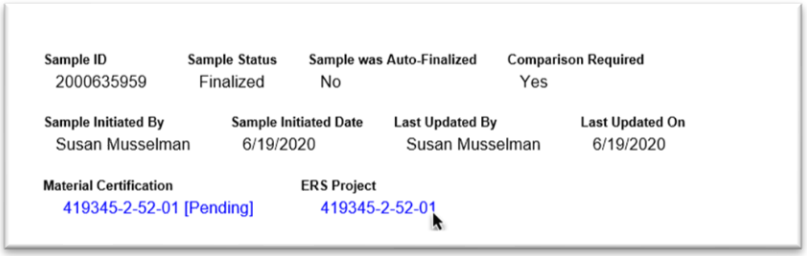
1. On the sample screen of the sample you wish to finalize, select the Finalize Sample option.

A Finalize Sample dialog box will appear with a message advising you that this step will make the sample eligible for comparison packages.



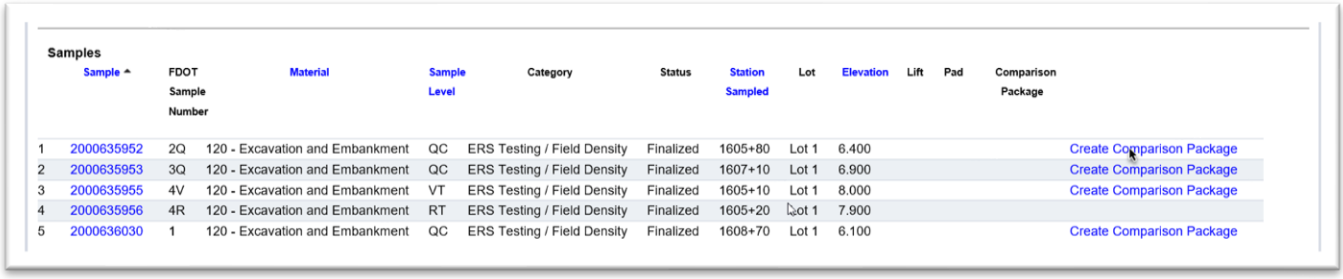
2. Select the Finalize option. The sample status will be updated to Finalized and the sample can be included in a comparison package.

You can navigate back to the ERS project by selecting the ERS project hotlink at the top of the sample screen.



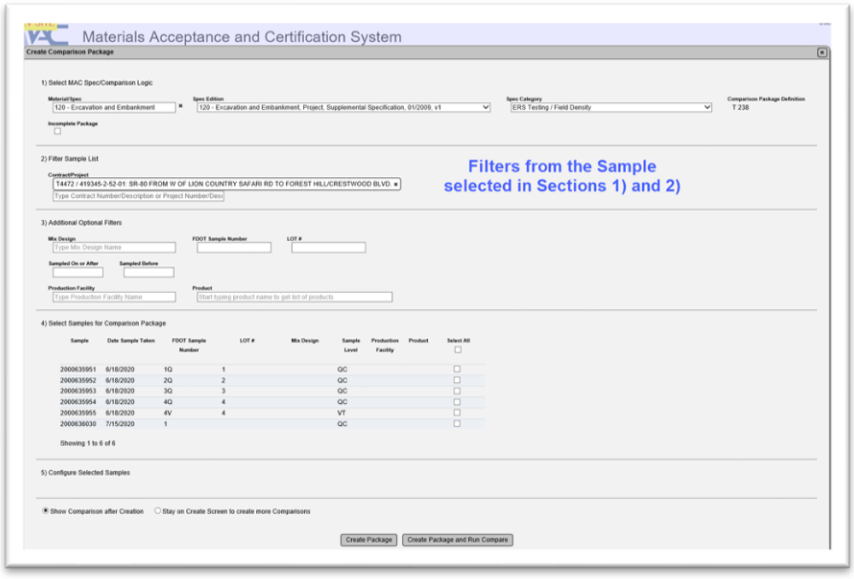
C. Creating an ERS Field Density Comparison Package

The PA can create comparison packages from the ERS Project screen. All the samples in the comparison package must be finalized. Then a hotlink to create a comparison package will appear on any sample that has a comparison requirement in the MAC Spec.

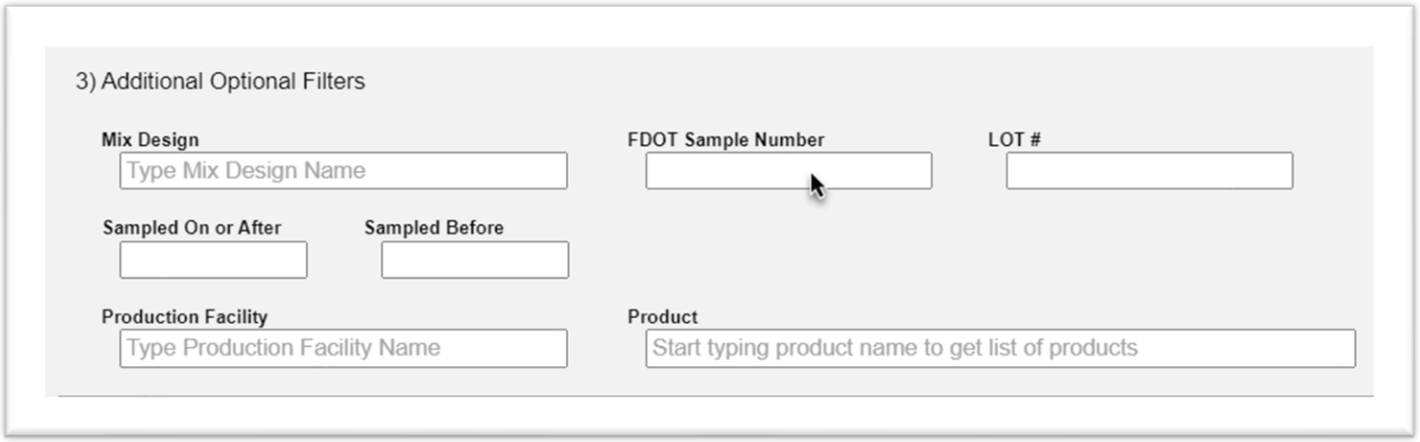


1. From the Logbook Sample List, select the Create Comparison Package option on one of the samples in the comparison package. It does not matter which one.

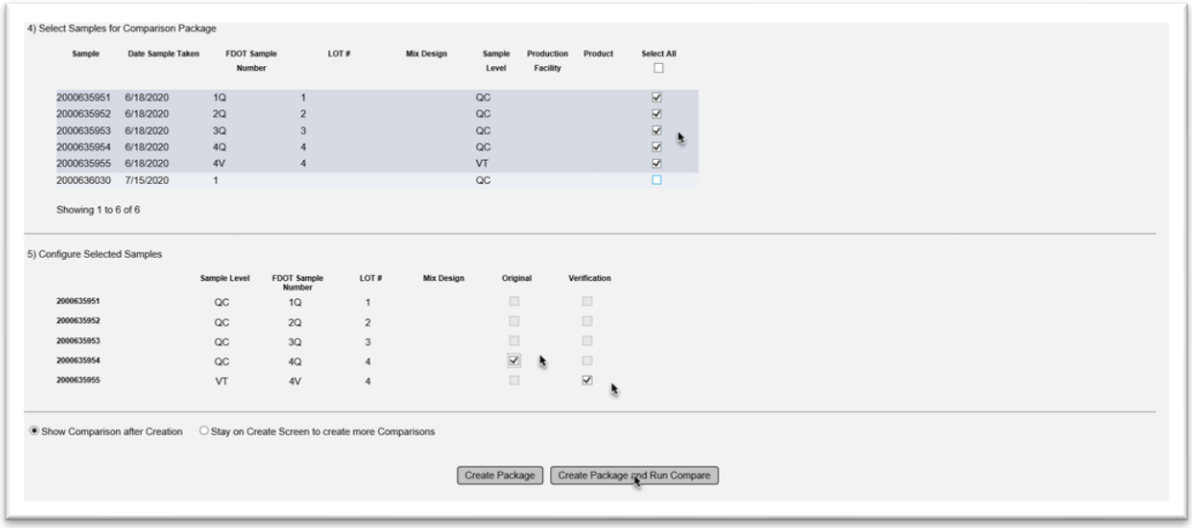
A Create Comparison Package dialog box appears over the ERS project screen. It automatically filters on the MAC Spec of the sample you selected with the hotlink and retrieves other samples in the same logbook matching those filters that are finalized, but not yet in a comparison package.



It is crucial that the ERS field density comparison packages be created on a regular basis, so the list doesn't contain too many samples to manage. The PA should perform sample review and create comparison packages at a minimum of a weekly basis in accordance with the ***Materials Manual Section 2.3 Volume I***.

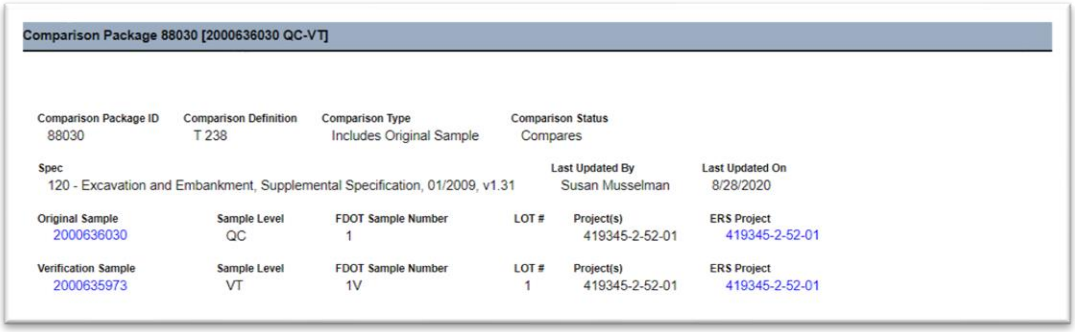


2. You can use FDOT Sample Number to filter further if needed.

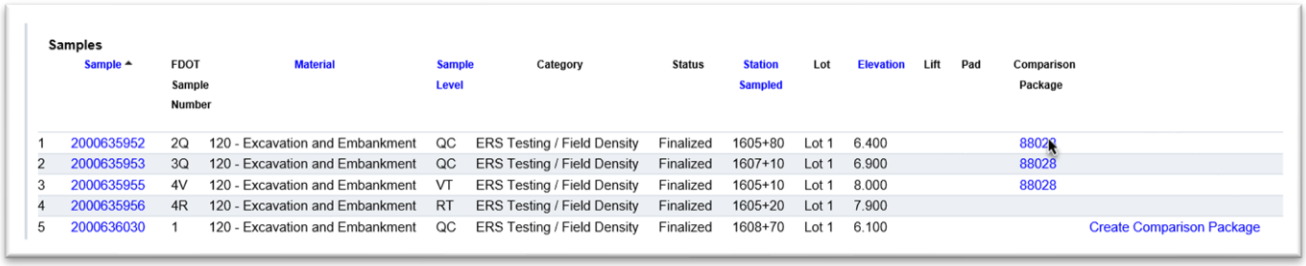


3. In Section 4), select the samples to be included in this comparison package. Section 5 will expand to include those samples.
4. In Section 5), select the original QC sample and the corresponding VT sample. If MAC indicates any, ensure the samples selected by MAC are correct or select the correct samples, if they are incorrectly assigned by the system.
5. Select the Create Package and Run Compares option.

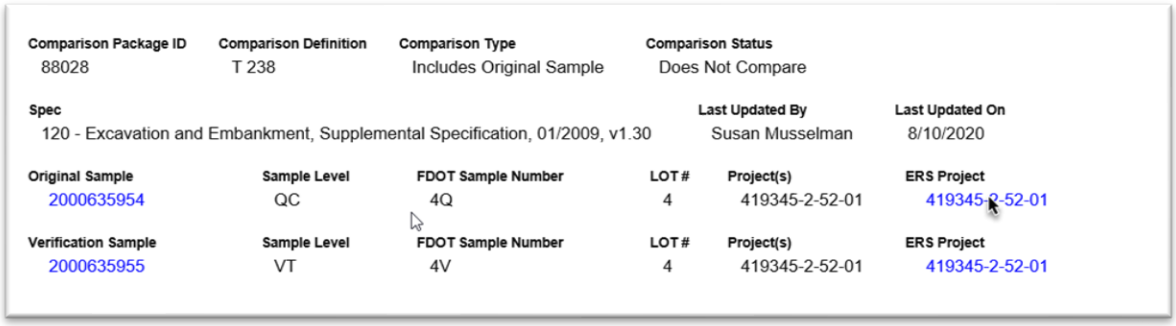
The comparison screen will show a comparison status. The samples in the package are considered to be closed.



On the Logbook Sample List, the samples in a comparison package show a hotlink to the package.



There is a link back to the ERS Project screen on the comparison package screen.



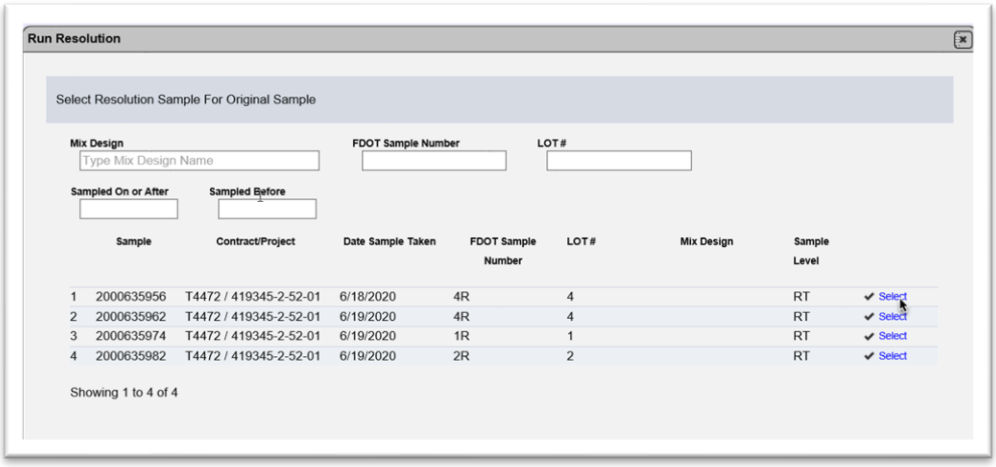
D. Adding the QR Resolution Sample to a Non-comparing Package

If the comparison status is Does Not Compare, the QR sample will most likely already be in MAC since the field personnel run the test as soon as they know there is a non-comparison.

NOTE: Selecting the Run Resolution option does not trigger the resolution process. It is used to add the resolution sample(s) to the comparison package after they are tested, submitted to FDOT for Verification, and finalized. Do not select the Run Resolution option until you have finalized the resolution sample(s).

1. On the comparison package screen that requires resolution, select the Run Resolution option.

A Run Resolution dialog box will appear. This dialog box includes any resolution sample with the same filters as the original search criteria that is not already in a comparison package.



2. Click on the blue Select option to select the resolution sample.

3. Once the appropriate sample is designated, select the Run option to run the resolution logic.

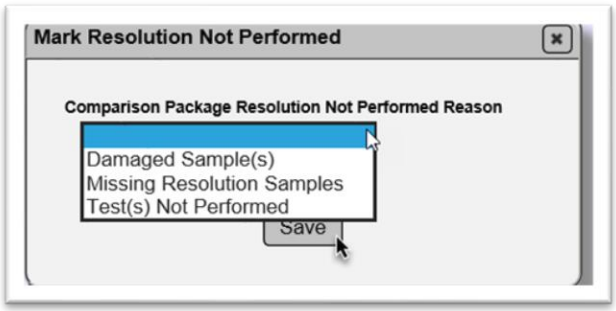
The Resolution Status is updated. The samples in the package are considered to be closed.

E. Designating Resolution Not Performed

If the QC technician does not perform the resolution test and it is not discovered until there is no opportunity to perform it, the package must be designated as Resolution Not Performed because resolution is required.

1. On the comparison package indicated as Does Not Compare, select the Mark Resolution Not Performed option.

A Mark Resolution Not Performed dialog box appears.

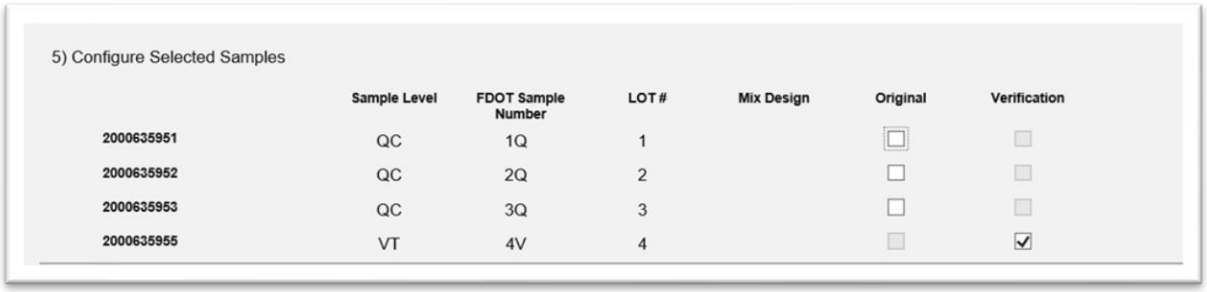


2. **Comparison Package Resolution Not Performed Reason** – select the appropriate reason from the dropdown list.
3. Select the Save option.

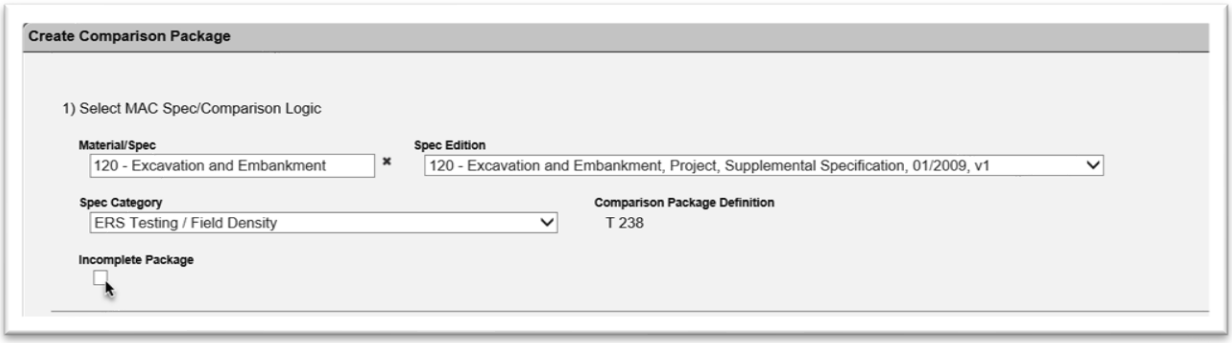
The samples in the package are considered to be closed. The missing resolution test is an Exception to the Project Materials Certification Letter (PMCL) under the Missed Frequency category.

F. Creating an Incomplete Package

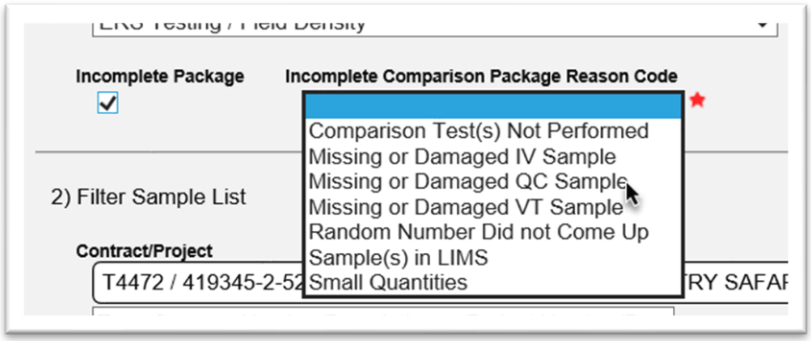
Sometimes the comparison package cannot be completed because the original sample, verification sample, or both are missing. When this happens, you still need to create a comparison package with the samples that are available and designate the comparison package as incomplete. Since one or both tests needed to perform the comparison are missing, no comparison status is applied. This closes the sample life cycle for the samples that are available.



1. Perform a create comparison package. The results will have one key sample missing. In this example, the QC original sample is missing. The VT sample and all the associated samples still need to be in comparison package to be considered closed.
2. Indicate all the samples that should be in this incomplete package.

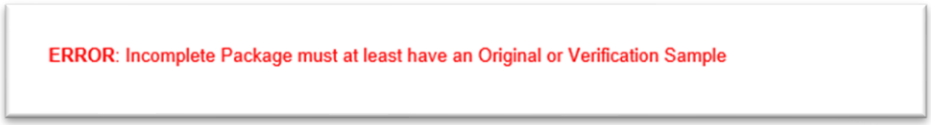


3. Under Section 1) Select MAC Spec/Comparison Login/select the Incomplete Package indicator.



4. **Incomplete Comparison Package Reason Code** – select the appropriate reason form the dropdown list.

Currently if you attempt to create the package without designating an original and verification sample, you will receive an error message.



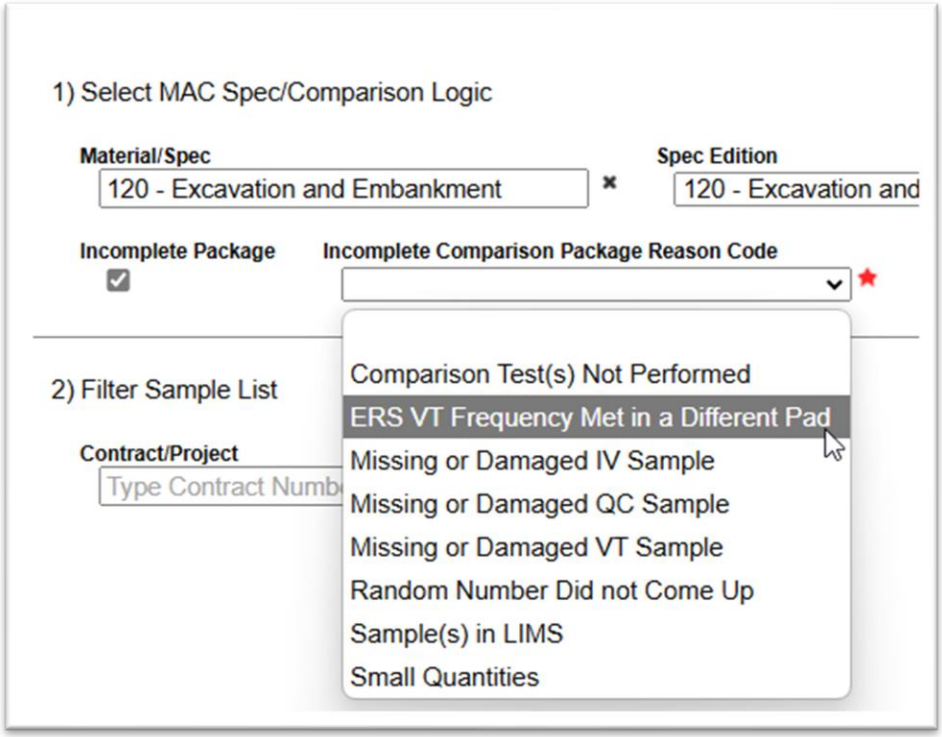
5. Select any sample in the incomplete package as the Original Sample. In our example, the reason we have an incomplete package is because the original sample is the missing sample, so this error message is incorrect. But the system will not allow you to continue until a sample is selected.

6. Select the Create Package option at the bottom of the screen to create the package.

The Status will be updated to Incomplete Package with the reason you assigned. The samples in the package are considered to be closed. This will create a finding and may result in an Exception to the PMCL under the Missed Frequency category.

G. Creating an Incomplete Package for VT sample in a Different Pad Plot

Sometimes QC creates plots pads so that a VT sample one plot may verify QC tests in more than one pad plot. MAC programming does not allow the VT sample to be included in a comparison package in a different pad. VT can always take the extra sample, but it is not required. There is a new Incomplete Package comparison reason for this situation when VT does not perform additional testing.



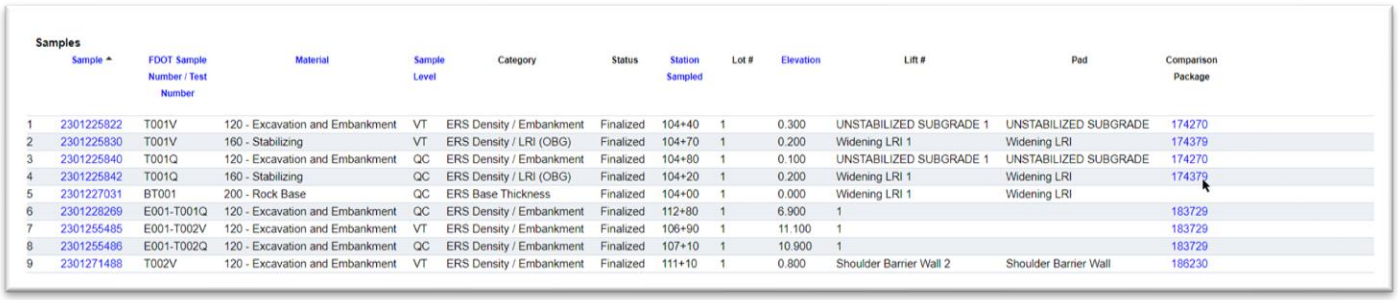
1. When VT is in a different pad, create an incomplete package for the “orphaned” QC sample(s).
2. **Incomplete Comparison Package Reason Code** – select the ERS VT Frequency Met in a Different Pad option.
3. Create the comparison package.
4. Click on the Comments tab to add a comment.
5. Select the New Comment option.

A New Comment dialog box appears.

6. Enter the logbook name along with the VT MAC number, or alternatively the VT MAC and comparison package number.
7. Select the Save option.

The comment will allow ERS IA PMUs and MC Reviewers to confirm that VT frequency has been met even thought it may appear visually that is has not been met.

H. Deleting an ERS Field Density Comparison Package



Samples

	Sample	FDOT Sample Number / Test Number	Material	Sample Level	Category	Status	Station Sampled	Lot #	Elevation	Lift #	Pad	Comparison Package
1	2301225822	T001V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	104+40	1	0.300	UNSTABILIZED SUBGRADE 1	UNSTABILIZED SUBGRADE	174270
2	2301225830	T001V	160 - Stabilizing	VT	ERS Density / LRI (OBG)	Finalized	104+70	1	0.200	Widening LRI 1	Widening LRI	174379
3	2301225840	T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	104+80	1	0.100	UNSTABILIZED SUBGRADE 1	UNSTABILIZED SUBGRADE	174270
4	2301225842	T001Q	160 - Stabilizing	QC	ERS Density / LRI (OBG)	Finalized	104+20	1	0.200	Widening LRI 1	Widening LRI	174379
5	2301227031	BT001	200 - Rock Base	QC	ERS Base Thickness	Finalized	104+00	1	0.000	Widening LRI 1	Widening LRI	
6	2301228269	E001-T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	112+80	1	6.900	1		183729
7	2301255485	E001-T002V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	106+90	1	11.100	1		183729
8	2301255486	E001-T002Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	107+10	1	10.900	1		183729
9	2301271488	T002V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	111+10	1	0.800	Shoulder Barrier Wall 2	Shoulder Barrier Wall	186230

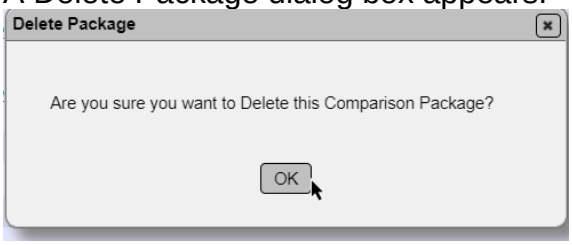
1. From the Logbook Sample List, select the comparison package hotlink.

You will be navigated to the Comparison Package screen for that package.

2. Select the Delete option.

NOTE: You may want to select the View for Print option and print the Comparison Package report before deleting the entry so you have a record of the package as it is now.

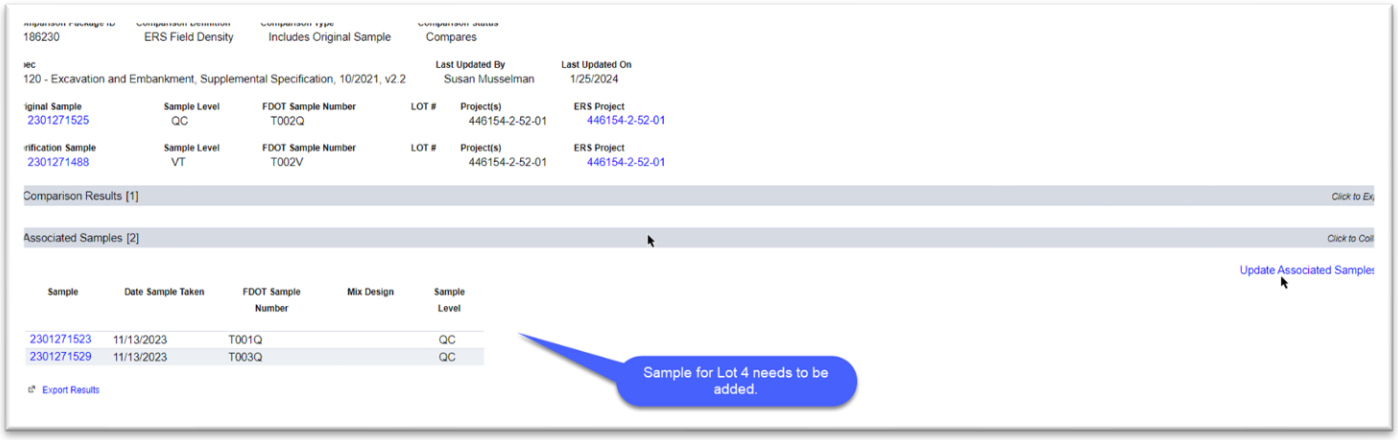
A Delete Package dialog box appears.



3. Select Ok to delete the package.

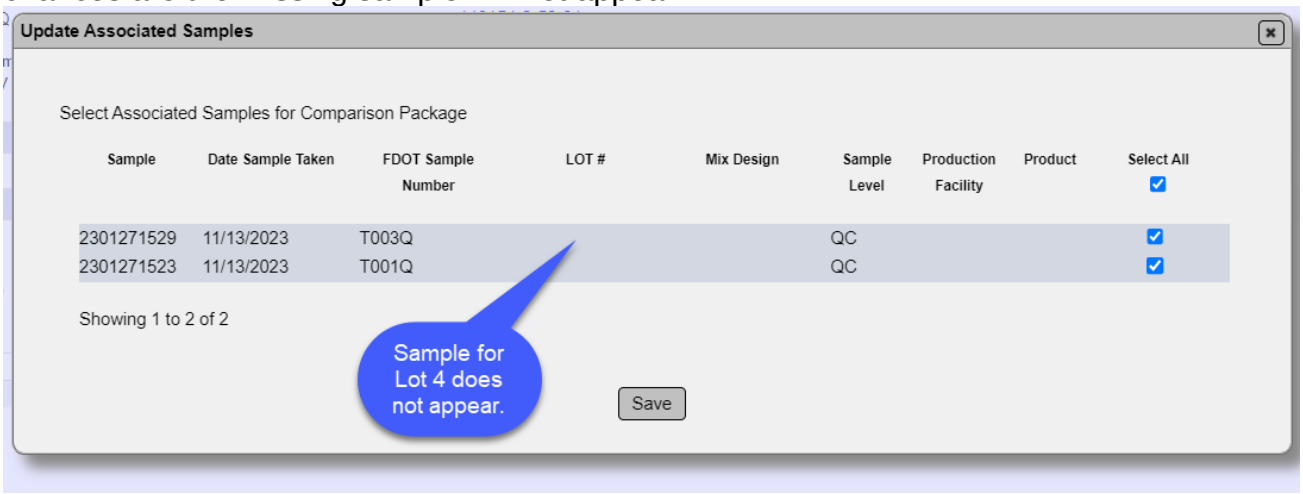
I. Adding an Associated Sample to an Existing Comparison Package

The ERS Comparison Package process is designed to occur from the ERS project screen. Because it has its own filtering and it assumes that all the samples will be present when the package is created, associated samples not included when the comparison package is created cannot be added later on the Comparison Package screen. The associated sample may be missing due to being originally missed and discovered during the ERS project review or sample summary reports. It may be possible for the missing sample to be taken so that there is not a missed frequency Exception on the PMCL. However, some time may have passed from when the original, verification and other associated samples were taken.

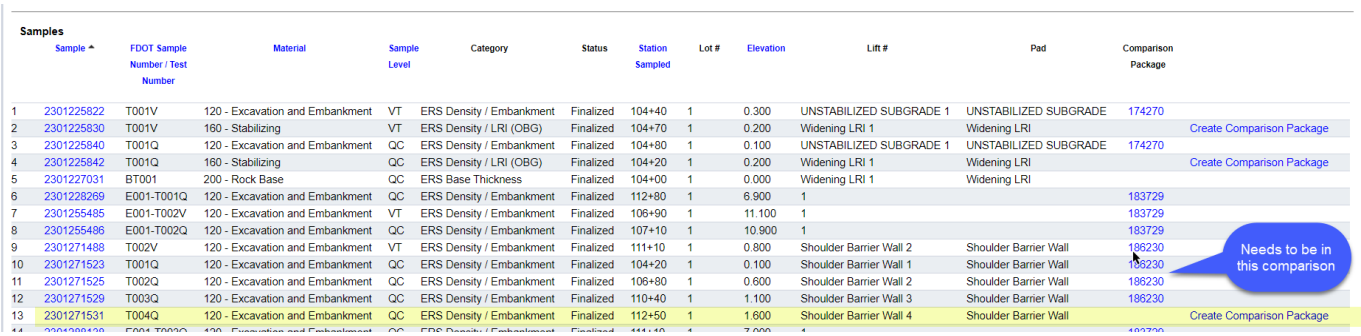


If the PA navigates to the Comparison Package screen and selects the Associated Samples tab, there is an Update Associated Samples option.

If the PA selects it, an Update Associated Samples dialog box appears. Since the special filtering for ERS comparison packages was not applied to the Comparison Package screen, chances are the missing sample will not appear.



In order to get MAC to apply the ERS filtering, you must use the ERS comparison package process from the ERS project screen.



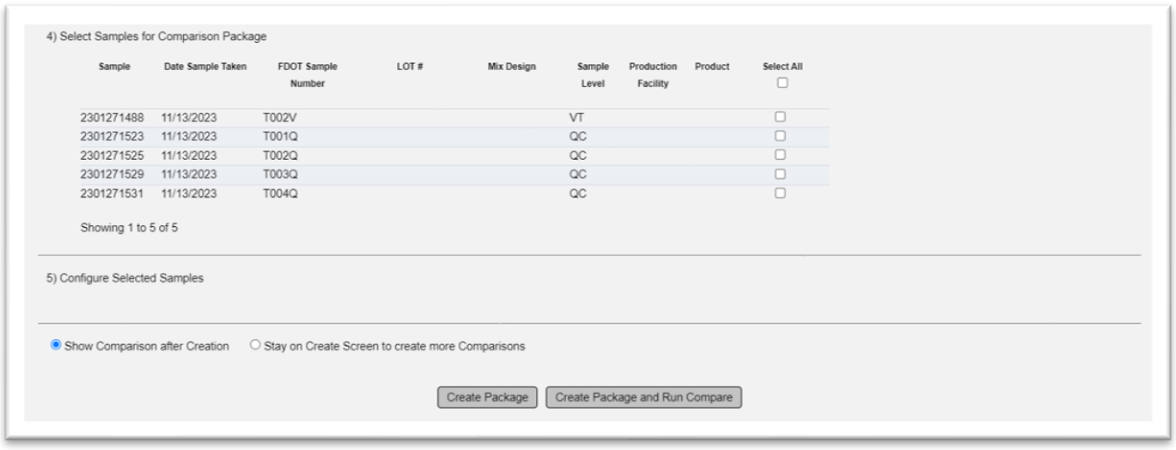
	Sample	FDOT Sample Number / Test Number	Material	Sample Level	Category	Status	Station Sampled	Lot #	Elevation	Lift #	Pad	Comparison Package	
1	2301225822	T001V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	104+40	1	0.300	UNSTABILIZED SUBGRADE 1	UNSTABILIZED SUBGRADE	174270	
2	2301225830	T001V	160 - Stabilizing	VT	ERS Density / LRI (OBG)	Finalized	104+70	1	0.200	Widening LRI 1	Widening LRI		Create Comparison Package
3	2301225840	T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	104+80	1	0.100	UNSTABILIZED SUBGRADE 1	UNSTABILIZED SUBGRADE	174270	
4	2301225842	T001Q	160 - Stabilizing	QC	ERS Density / LRI (OBG)	Finalized	104+20	1	0.200	Widening LRI 1	Widening LRI		Create Comparison Package
5	2301227031	BT001	200 - Rock Base	QC	ERS Base Thickness	Finalized	104+00	1	0.000	Widening LRI 1	Widening LRI		
6	2301228269	E001-T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	112+80	1	6.900	1		183729	
7	2301255485	E001-T002V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	106+90	1	11.100	1		183729	
8	2301255486	E001-T002Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	107+10	1	10.900	1		183729	
9	2301271488	T002V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	111+10	1	0.800	Shoulder Barrier Wall 2	Shoulder Barrier Wall	186230	
10	2301271523	T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	104+20	1	0.100	Shoulder Barrier Wall 1	Shoulder Barrier Wall	186230	
11	2301271525	T002Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	106+80	1	0.600	Shoulder Barrier Wall 2	Shoulder Barrier Wall	186230	
12	2301271529	T003Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	110+40	1	1.100	Shoulder Barrier Wall 3	Shoulder Barrier Wall	186230	
13	2301271531	T004Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	112+50	1	1.600	Shoulder Barrier Wall 4	Shoulder Barrier Wall		Create Comparison Package

1. From the ERS Project screen, on the Logbook Sample List with the missing associated sample, find the comparison package hot link it should be in and click on it to be taken to the Comparison Package screen.
2. Follow the instructions in H. Deleting an ERS Field Density Comparison Package.
3. Navigate back to the ERS project and logbook where the samples to be in the comparison package are listed.

9	2301271488	T002V	120 - Excavation and Embankment	VT	ERS Density / Embankment	Finalized	111+10	1	0.800	Shoulder Barrier Wall 2	Shoulder Barrier Wall	Create Comparison Package
10	2301271523	T001Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	104+20	1	0.100	Shoulder Barrier Wall 1	Shoulder Barrier Wall	Create Comparison Package
11	2301271525	T002Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	106+80	1	0.600	Shoulder Barrier Wall 2	Shoulder Barrier Wall	Create Comparison Package
12	2301271529	T003Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	110+40	1	1.100	Shoulder Barrier Wall 3	Shoulder Barrier Wall	Create Comparison Package
13	2301271531	T004Q	120 - Excavation and Embankment	QC	ERS Density / Embankment	Finalized	112+50	1	1.600	Shoulder Barrier Wall 4	Shoulder Barrier Wall	Create Comparison Package

3. On the Logbook Sample List, all the samples that were in the comparison package that was deleted will now have the Create Comparison Package option. Select the option on any sample to get the ERS Create Comparison Package screen.

From here the instructions are the same as in C. Creating an ERS Field Density Comparison Package.



J. Comparison Packages for Thicklift Approval

1. Embankment and Rock Base

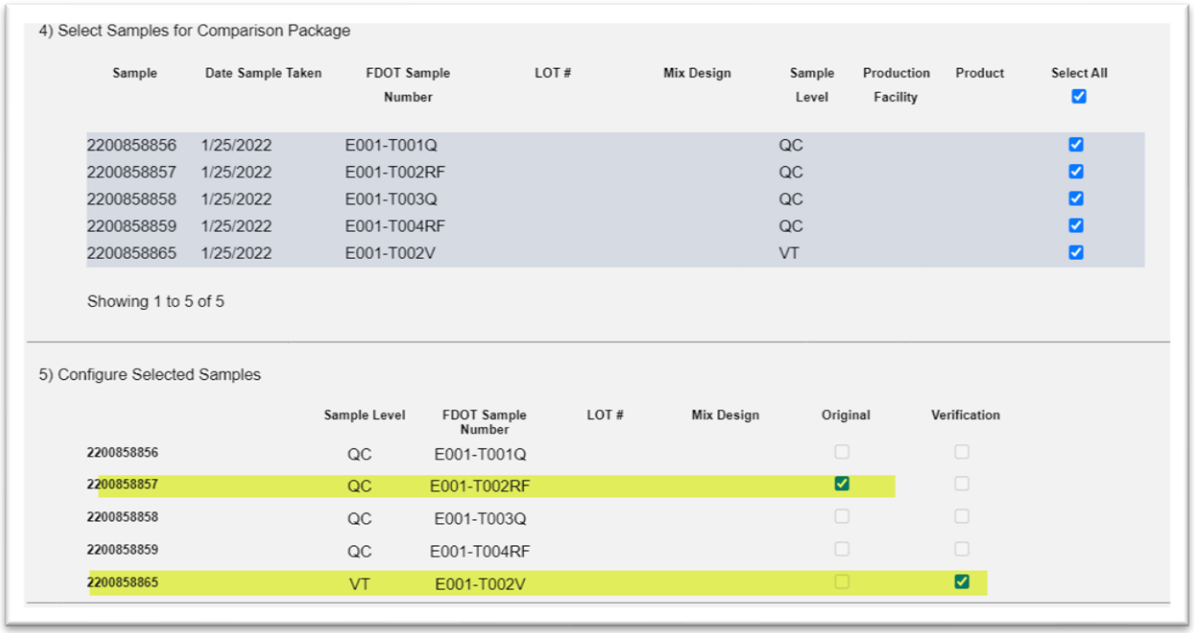
The comparison package is made up of 1 original QC sample, one verification VT sample. There are no associated samples. If the original and verification samples compare and the PA approves thick lifts, the project moves to standard production comparison packages (C. Creating a Field Density Comparison Package).

2. Retaining Wall

The comparison package is made up of 1 original QC sample, one verification VT sample and 3 associated QC samples. The process follows C. Creating a Field Density Comparison Package during the life of the test wall. Once the test wall is complete, if the and the PA approves thick lifts, the project moves to standard production comparison packages.

K. Comparison Packages for Reduced Frequency

When creating comparison packages for reduced frequency, be aware that the VT sample may fall on a lift that was not tested by QC because it was a reduced frequency lift as shown in this example.



4) Select Samples for Comparison Package

Sample	Date Sample Taken	FDOT Sample Number	LOT #	Mix Design	Sample Level	Production Facility	Product	Select All
2200858856	1/25/2022	E001-T001Q			QC			☑
2200858857	1/25/2022	E001-T002RF			QC			☑
2200858858	1/25/2022	E001-T003Q			QC			☑
2200858859	1/25/2022	E001-T004RF			QC			☑
2200858865	1/25/2022	E001-T002V			VT			☑

Showing 1 to 5 of 5

5) Configure Selected Samples

	Sample Level	FDOT Sample Number	LOT #	Mix Design	Original	Verification
2200858856	QC	E001-T001Q			☐	☐
2200858857	QC	E001-T002RF			☑	☐
2200858858	QC	E001-T003Q			☐	☐
2200858859	QC	E001-T004RF			☐	☐
2200858865	VT	E001-T002V			☐	☑

The original sample is E001-T002RF. The verification sample is E001-T002V. The associated samples are E001-T001Q, E001-T003Q and E001-T004RF.

Chapter 3 – Impact of Proctor Sample Life Cycle on ERS Field Density samples

It is a common practice to proceed with earthwork operations before proctor samples have completed the MAC sample and comparison life cycles. Because the proctor sample is a child record of ERS field density samples, changes to proctor sample data impacts ERS field density samples. Contractors must understand that by proceeding, there is a risk that material acceptance issues will be encountered later and will take extra steps to resolve. PAs must understand how this practice impacts ERS field density samples. The proctor sample must be created in MAC for the ERS field density technicians to select it. There should be no situation where field densities are being performed and the proctor material has not been sampled.

1. Proctor Test hasn't been Performed

Field densities samples can be created but not submitted to FDOT for Verification because the proctor sample Maximum Density value is a required field and cannot be populated from the proctor sample if the test has not been performed and the value populated on the proctor test. The ERS field density sample status will be Logged or Submitted for Lab Testing and sample cannot be Submitted to FDOT for Verification by a Data Reviewer from the Sample screen until the Maximum Density value from the proctor sample is populated on the ERS field density sample.

2. Proctor Test is Designated as Not Performed

If the lab is not able to complete the proctor test, and marks the proctor sample as Test Not Performed, the ERS field density sample(s) using that proctor sample will not have a Maximum Density value to import. The density sample(s) will need to have the proctor sample selected replaced on the Sample screen with the new proctor sample that has the proctor test performed.

3. Proctor Sample is tested, not Submitted to FDOT

Until the proctor sample is Submitted to FDOT for Verification, the Maximum Density value may change if the Data Reviewer updates the test when confirming the data before submitting to FDOT for Verification. This also may happen later in the sample life cycle; for example, the PA returns the proctor sample to the company of the lab for test corrections. On ERS field density samples, MAC will replace the Maximum Density value and recalculate the % Maximum Density. If the recalculation results in a failure, the ERS field density test disposition will be designated as **Fail***.

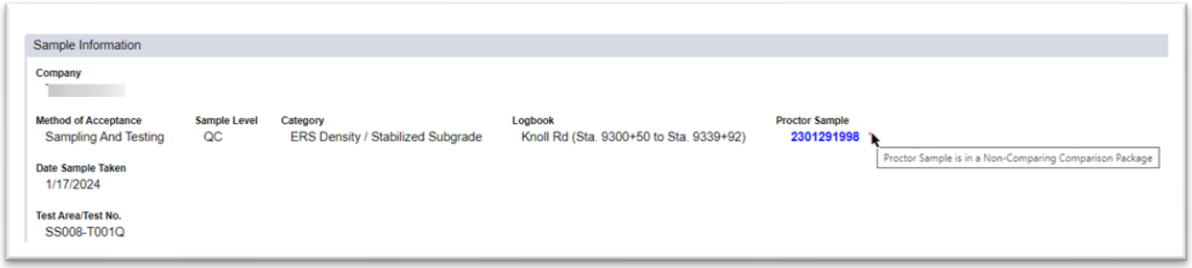
4. Proctor Type Impact on the Material Placed Condition Field

When the proctor type cannot be derived from the proctor sample on the ERS field density test, the dropdown options for the "Material placed condition?" field will not populate correctly.

5. Proctor Sample is not in a Comparison Package or Does Not Compare

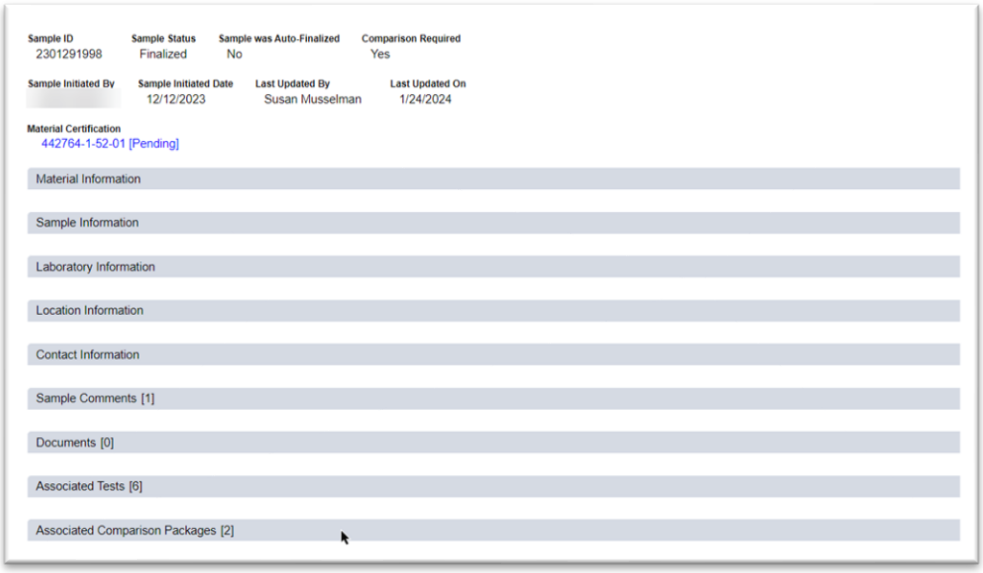
If the proctor sample comparison package hasn't been created and comparison performed, the comparison status is unknown. If it has been created and the comparison status is Does Not Compare, resolution must be performed to indicate if the QC proctor Maximum Density value can be used. If resolution is performed and QC is not upheld, all ERS field density samples using the QC proctor sample must have the QC proctor sample replaced with the proctor sample to be used as indicated in the resolution process. This must be done by a Data Reviewer of the companies on the Sample screen for any samples impacted, not just QC samples.

Any ERS field density sample with a proctor sample in a comparison package that Does Not Compare will have this flag.



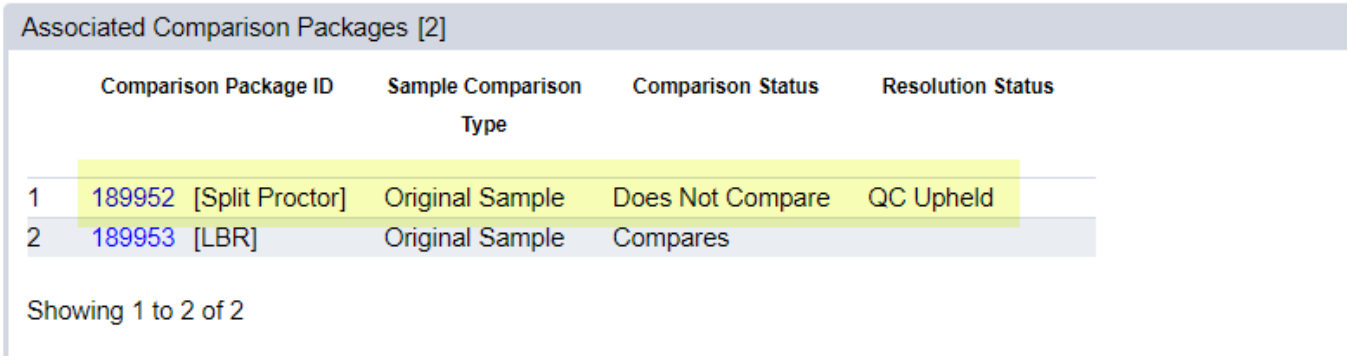
This is not a finding by itself. It is intended to indicate there may be further action needed based on the resolution results. The flag triggers Data Entry and the PA to see if any samples need to be changed because the proctor sample resolution status indicates QC results should not be used.

1. Click on the proctor sample MAC Sample Id hotlink to be navigated to the proctor sample screen.



2. Click on the Associated Comparison Packages tab to expand it.

Some soils samples can be included in more than one comparison package.


Associated Comparison Packages [2]

	Comparison Package ID	Sample Comparison Type	Comparison Status	Resolution Status
1	189952 [Split Proctor]	Original Sample	Does Not Compare	QC Upheld
2	189953 [LBR]	Original Sample	Compares	

Showing 1 to 2 of 2

3. Review the comparison package designated with the Proctor comparison. Pay attention to the Resolution status.
a. If resolution is not yet performed, you will not be able to decide if additional steps are needed.
b. If resolution is performed, there are 2 possible outcomes.
i. **QC Upheld** – no action needed. The QC proctor sample can remain on any ERS field density sample.
ii. **Use VT Results for Acceptance** – action must be taken on **all** ERS field density samples using the proctor sample

- Return the samples for sample and test corrections (Chapter 2, Section A 4. Returning a Sample for both Sample and Test Corrections
- Have the appropriate Data Reviewers replace the QC proctor sample id with the VT proctor sample id
- MAC will recalculate the % compaction
    - This may result in a previously failing test now passing and vice versa
    - Failing test results need a manual finding on the MC Review so that the resolution can be documented

Chapter 4 – Searching for all ERS Open Samples on a Project

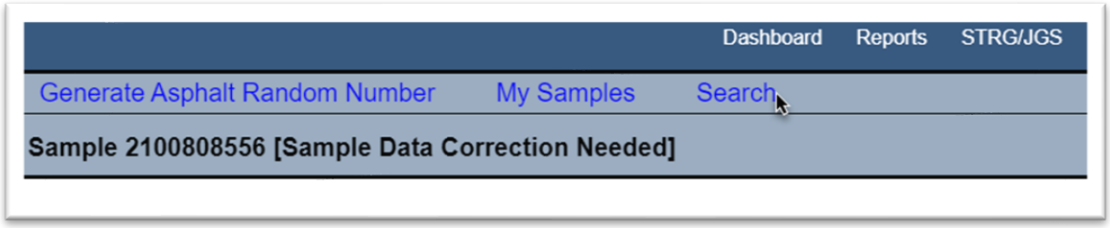
Sometimes the PA may wish to see all the samples on a project that are not yet finalized. You can only see the samples on a specific logbook on the ERS Project screen.

A. Finding Open Samples on the Sample Search Subscreen

The Sample Search screen can be helpful for finding open ERS samples.

1. Select the Samples menu option.
2. Select the Manage Samples submenu option.

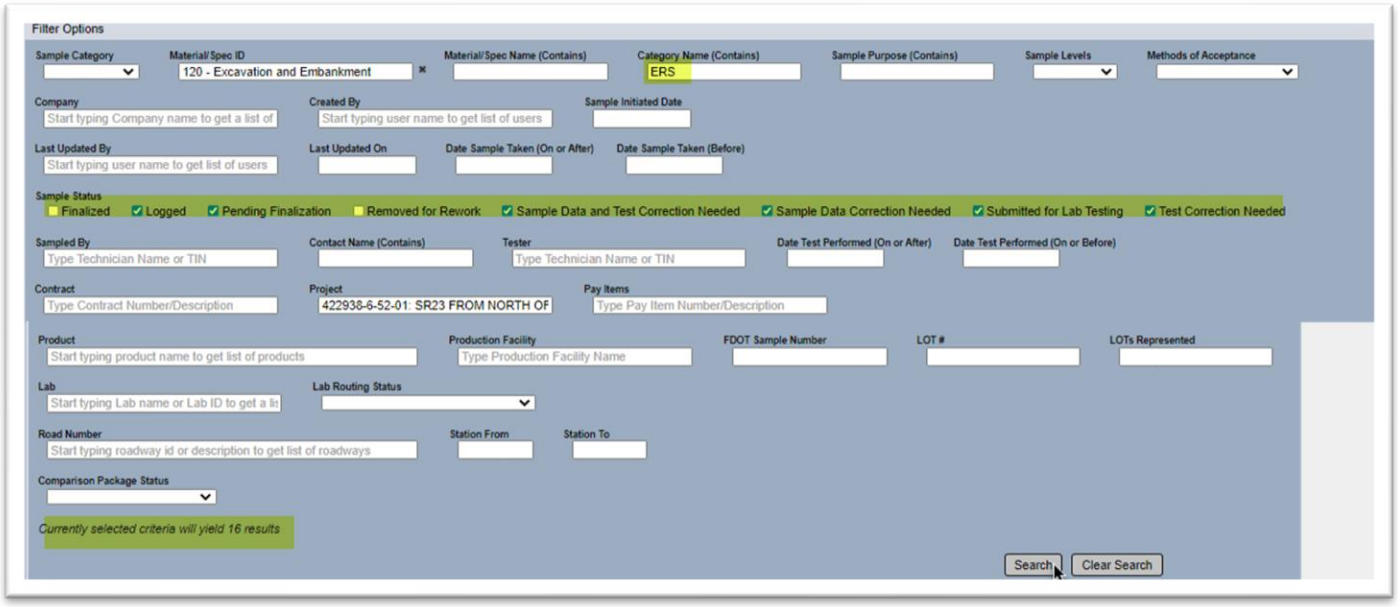
The Sample screen appears.



3. Select the Search option.

The Sample Search subscreen appears over the Sample screen in the background with filters to apply to the sample search.

4. Use the following filters:
a. Material/Spec Id – one of the MAC ERS Material Ids
i. 120 – Excavation and Embankment
ii. 145 – Geosynthetic Reinforcement
iii. 160 – Stabilizing
iv. 200 – Rock Base
v. 548 – Retaining Walls
b. Category Name (Contains) – ERS. This will eliminate all lab tests.
c. Sample Status – check all but “Finalized” and “Removed for Rework.
d. Project – the ERS FPN



5. Select the Search option to retrieve the list of open samples.

The list of samples will appear on the bottom of the Search subscreen.

4	2100857806	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	t1
5	2100857808	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	t1
6	2100857809	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T001Q
7	2100857810	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T002Q
8	2100857814	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T003Q
9	2100857816	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T004Q
10	2100857817	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T005Q
11	2100857818	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T006Q
12	2100857819	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T007Q
13	2100857821	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/27/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	T008Q
14	2100857838	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/29/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	E001-T002Q
15	2100857839	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Pending Finalization	10/29/2021	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	E001-T003Q
16	2200858114	120 - Excavation and Embankment, Change Order [10/2021], v1.0	QC	Logged	1/4/2022	T2717 / 422938-6-52-01: SR23 FROM NORTH OF SR16 TO NORTH OF SR21(BLANDING BLVD)	PH001-T008Q

Showing 1 to 16 of 16 Export Results

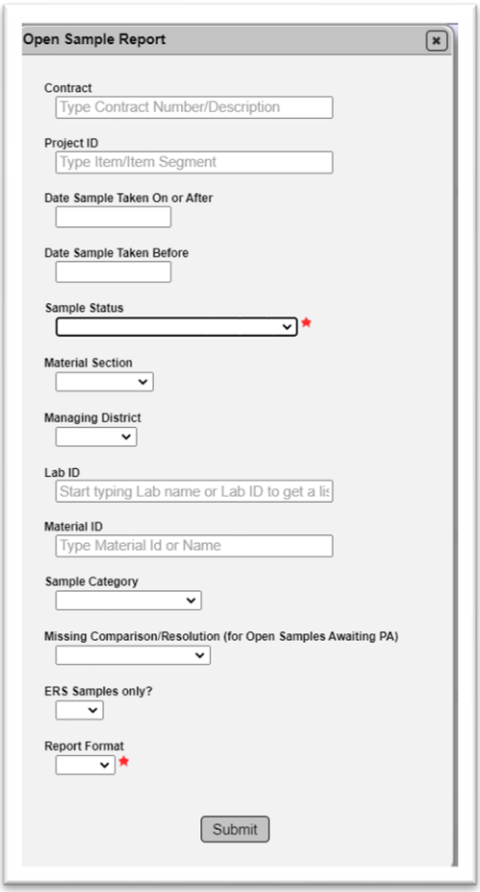
6. Click on any row to navigate to a sample.
7. To export the results to an Excel file, select the Export Results option.

B. Finding Open Samples with the Open Sample Report

1. Select the Reports menu option.

2. Under the Sample tab, select the Open Sample Report option.

An Open Sample Report dialog box appears. Only fields with red stars are required.



3. **Contract or Project** – enter either a contract number or FPN and select the entry from the returned list to get only the samples for that contract or project.
4. **Sample Status** – you can select any option you want, but to see all open samples up to finalized on the same report, select the All but Finalized option. If you want to see the samples that are awaiting the PA to finalize, select the Pending Finalization Status.
5. **ERS Samples only?** – select this option to only get ERS samples.
6. **Report Format** – select PDF or Excel.
7. **Missing Comparison/Resolution** – select the appropriate option.
8. Open Samples Awaiting PA – to see all ERS Samples that are waiting for a PA to perform a function, select the following parameters:
a. Contract or Project
b. Sample Status = Pending Finalization
c. Missing Comparison/Resolution = Both
d. ERS Samples only? = Yes
9. Enter any other parameters as desired.
10. Select the Submit option.

MAC will download the report. Open the downloaded file as appropriate for your browser.

Chapter 5 – ERS Reports

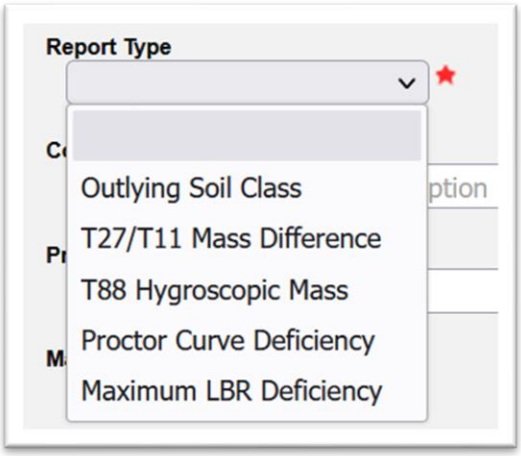
Many of the ERS reports have a dual purpose. One is for the project personnel to monitor sample status and health. The other is for ERS PMUs to find issues with ERS data before it becomes a finding. Here are the reports in MAC that can be used for project sample monitoring.

A. Project Tab Reports

These reports are listed under the Project tab on the MAC Reports page. Many of these reports were created as a stop-gap measure until MC Review for ERS was implemented. They are still good for checking certain issues.

1. Earthwork Non-Compliance

This report assists with issues in the laboratory samples which can sometimes impact ERS field densities.



2. Earthwork Sample Analysis

This is a detailed report of the laboratory samples including test results, comparison results, and charts for gradation and proctor.

3. Earthwork Sample and LOT #

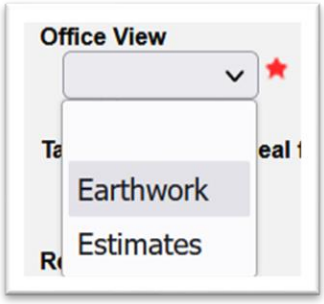
This is a sample summary report assists in determining if there are any missed frequencies in the laboratory samples.

4. Earthwork Summary of Proctors

This report summarizes the proctor samples for an ERS Project.

5. *ERS – Base Thickness*

This report summarizes the ERS base thickness samples and it has two options. Under the Office View option, it can be generated at any time for ERS PMU as a sample status report by selecting the Earthwork option. For the final version when all ERS base thickness samples are complete, the Estimates option should be selected. The report then averages the base thicknesses in accordance with Final Estimates and ***Specification*** requirements.



6. *ERS - Density*

This report summarizes the FM 1-T 238 or FM 1-T 310 tests for a project, logbook, date range or station range.

7. *ERS – Gauge Calibration/Usage*

This is a report for gauge calibration data and usage on projects for a specific company. It is designed to assist ERS PMUs in identifying all projects a gauge has been used.

8. *ERS – Gauge Comparison*

This report summarizes the gauge comparisons on an ERS project.

9. *ERS – Gauge Error*

The purpose of this report is to check on all ERS projects in a managing district for gauges with errors showing in the ERS – Density report.

10. *ERS – Pit Proctor Tracking*

This report summarizes all the ERS density samples on a contract or project with a pit proctor designated on the density sample.

11. *ERS – Stabilizing Mixing Depth*

This is a report summarizing the stabilizing mixing depth samples on an ERS project.

12. ERS – Unqualified Technicians

This report identifies testing technicians being flagged as unqualified on ERS samples.

B. Sample Tab Reports

In conjunction with the ERS and earthwork specific reports, there are other reports that can be found under the Sample Tab which might be helpful for ERS PMUs.

1. Open Sample Report

This report is designed for PAs to be able to determine if project samples are still open. There is no Open status that appears on any sample screen. In addition to samples that are still being processed through the sample life cycle, some samples are open if they are required to be in a comparison package. Based on the results of the comparison, they may still be considered to be open even after they are included in a comparison package. Because MAC does not display open sample findings on the MC Review findings list until the Final Review is initiated, this report is helpful in monitoring the processing of open samples during the life of the ERS project. The report has many options. It has a feature for “ERS only”.